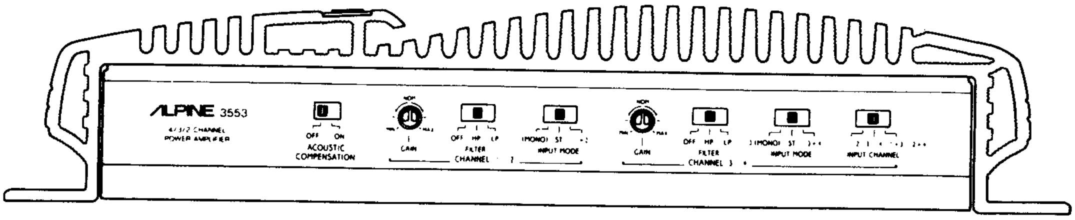
291

# ALPINE SERVICE MANUAL

## 4/3/2 Channel Power Amplifier


ALPINE 3553
4/3/2 CHANNEL
POWER AMPLIFIER
OFF
ON
ACOUSTIC
COMPENSATION
NOM
MIN
MAX
GAIN
OFF
HP
LP
FILTER
CHANNEL 1 2
(MONO)
ST
INPUT MODE
NOM
MIN
MAX
GAIN
OFF
HP
LP
FILTER
CHANNEL 3 4
(MONO)
ST
INPUT MODE
INPUT CHANNEL

# 3553

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Additional Schematic Diagram Inserted.

# Specifications

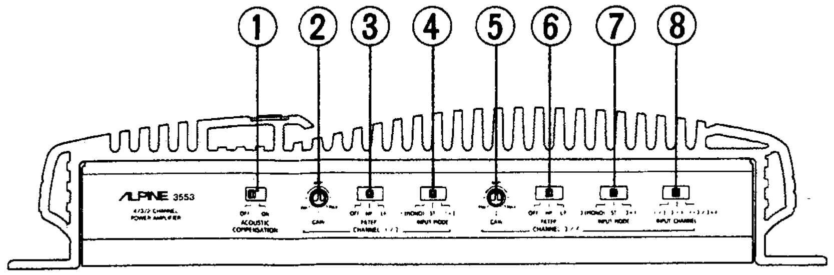
| | |
|---|---|
| Power Source | 14.4V DC (11V to 16V allowabe) |
| Current Drain (No Signal) | 2.5A |
| Power Output (20Hz~20kHz) | 0.08% T.H.D. Load 4ohm×4 : 30W |
| | 0.8% T.H.D. Load 2ohm×4 : 45W |
| | 0.8% T.H.D. Load 4ohm×2 at BTL : 90W |
| Input Sensitivity (at 35W output) | 0.1~2V±2dB |
| Input Impedance | 20±2kohm |
| Frequency Response (at -1dB) | 20Hz~40kHz |
| S/N Ratio | 100dB |
| Residual Noise | 0.14mA |
| Semiconductors | 17 IC's, 47 Transistors, 16 Diodes, 5 Zener Diodes |
| Dimensions (W×H×D) | 285×55×270mm |
| Weight | 3.5kg |

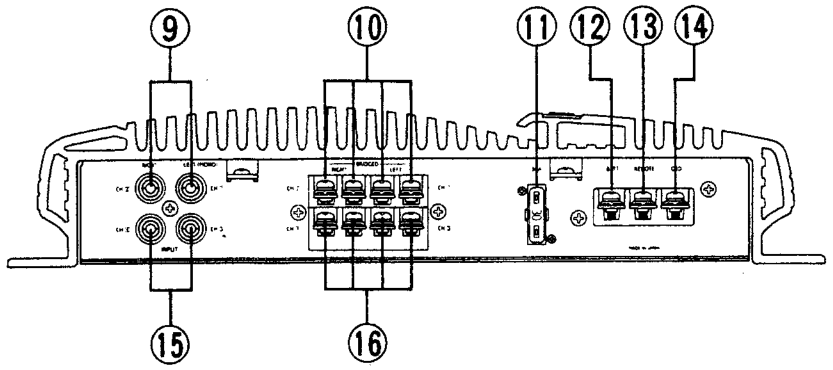
**Note:** Due to continuing product improvement, specifications and design are subject to change without notice.

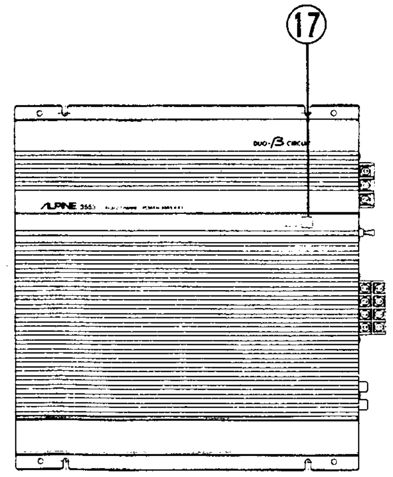
# FEATURES

- **4/3/2-CHANNEL OPERATION**
  The 3553 can be used in as:
  a. 4-channel amplifier, producing 35w per channel into 4 Ω, or 50w per channel into 2 Ω.
  b. 3-channel amplifier, producing 35w(4 Ω) or 50w(2 Ω) into channels 1 & 2, and 100w(4 Ω) into the third channel.
  c. 2-channel amplifier, producing 100w per channel into 4 Ω.
- **STATUS MONITOR**
  This indicator illuminates in green when the amplifier is on and operational. This light will turn orange if any internal protection circuitry is activated.
- **ACTIVE DIVIDING NETWORK**
  A pair of built-in, switchable and independent electronic crossover network at 80Hz, 18dB per octave, can be used to set up the amplifier for low-pass (subwoofer) or high-pass (tweeter/midrange satellite) applications. These networks can also be switched off to allow full-range signal amplification.
- **ACOUSTIC COMPENSATION CIRCUITRY**
  A selectable (Off or On) equalization curve can be added to the amplifier's output signal, compensating for the inherent non-linearities of the automobile interior. It extends low bass response and eliminates mid-bass boominess, giving the low frequency response of the audio system tightness and accuracy.

# SWITCHES AND TERMINALS







# SWITCHES AND TERMINALS

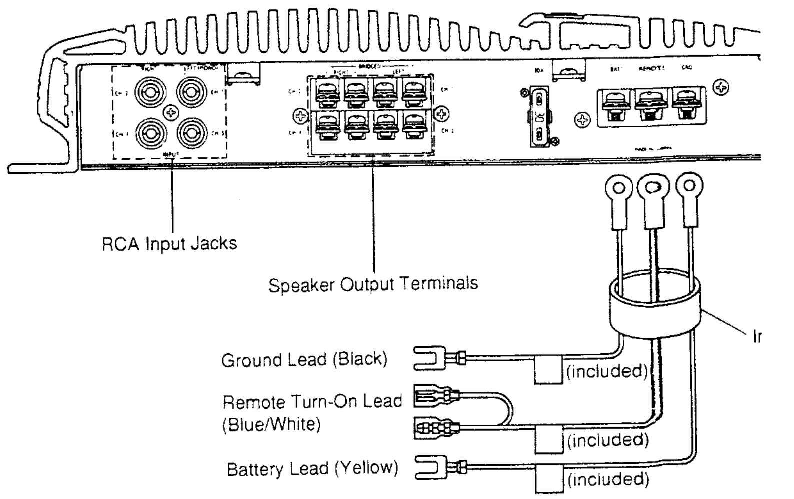
① Acoustic Compensation Switch
② Input Gain Adjustment Control (Channels 1/2)
③ Active Dividing Network Mode Selector Switch (Channels 1/
④ Input Mode Selector Switch (Channel 1/2)
⑤ Input Gain Adjustment Control (Channels 3/4)

⑥ Active Dividing Network Mode Selector Switch (Channels 3/
⑦ Input Mode Selector Switch (Channels 3/4)
⑧ Input Channel Selector Switch
⑨ RCA Input Jacks (Channels 1/2)
⑩ Speaker Output Terminals (Channels 1/2)

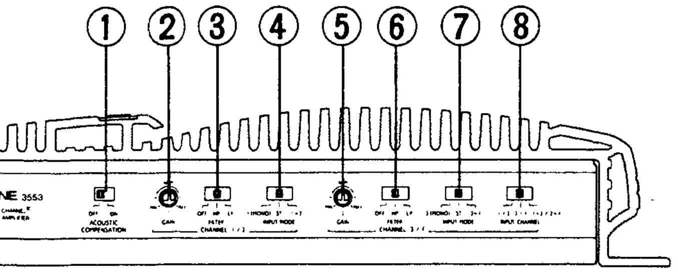
⑪ Fuse Block
⑫ Battery Lead Terminal
⑬ Remote Turn-On Lead Terminal
⑭ Ground Lead Terminal
⑮ Speaker Output Terminal (Channels 3/4)

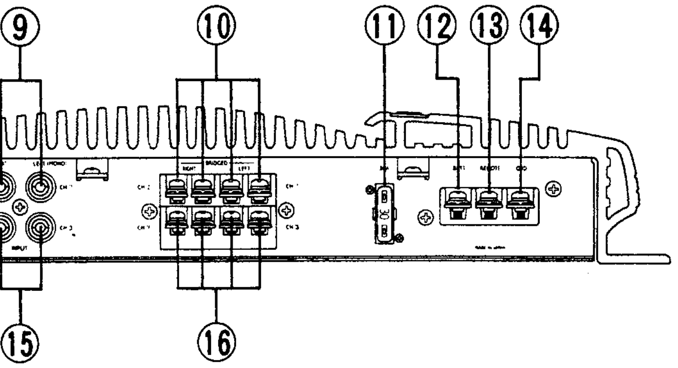
⑯ RCA Input Jacks (Channels 3/4)
⑰ Status Monitor

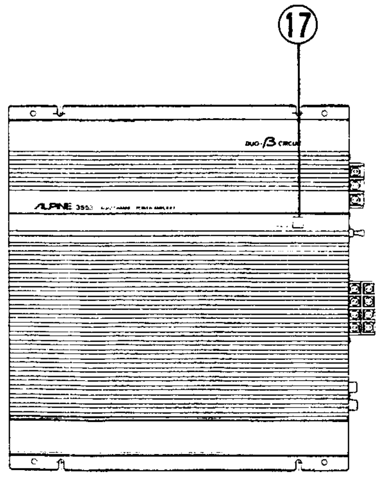
# CONNECTIONS



## WITCHES AND TERMINALS







## SWITCHES AND TERMINALS

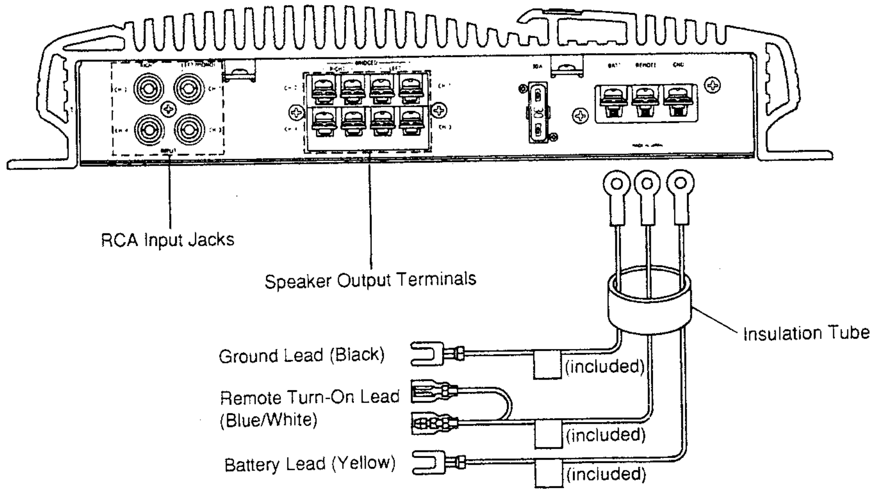
① **Acoustic Compensation Switch**
② **Input Gain Adjustment Control (Channels 1/2)**
③ **Active Dividing Network Mode Selector Switch (Channels 1/2)**
④ **Input Mode Selector Switch (Channel 1/2)**
⑤ **Input Gain Adjustment Control (Channels 3/4)**

⑥ **Active Dividing Network Mode Selector Switch (Channels 3/4)**
⑦ **Input Mode Selector Switch (Channels 3/4)**
⑧ **Input Channel Selector Switch**
⑨ **RCA Input Jacks (Channels 1/2)**
⑩ **Speaker Output Terminals (Channels 1/2)**

⑪ **Fuse Block**
⑫ **Battery Lead Terminal**
⑬ **Remote Turn-On Lead Terminal**
⑭ **Ground Lead Terminal**
⑮ **Speaker Output Terminal (Channels 3/4)**

⑯ **RCA Input Jacks (Channels 3/4)**
⑰ **Status Monitor**

## CONNECTIONS



## CONNECTIONS

Before making connections, be sure to turn the power off to all audio components. Insulation tubes for the speaker leads and the power supply leads are supplied with the 3553, route the speaker leads and the power supply leads separately through these tubes.

- **CAUTION:**
  Always keep the CH 3/4 RCA inputs of the 3553 connected to a signal source while the amplifier is in operation. If CH 3 and 4 inputs are not tied to the signal source, the source and the amp will not have a common ground reference point, and high output distortion may result. This is due to special grounding characteristics that have been implemented in the 3553 to ensure an installation-noise-free operation.
- **Speaker Output Terminals**
  The 3553 has two sets of speaker outputs. Be sure to observe correct speaker output connections and phasing. In the stereo mode connect the right speaker output to the right speaker and the left to left. Connect the positive output to the positive speaker terminal and the negative to negative. In the bridged mode, connect the left positive to the positive terminal on the speaker and the right negative to the negative terminal of the speaker. Do not use the speaker (–) terminal commonly for the right and left speakers or connect it to the vehicle's chassis ground.
  **NOTE:**
  Do not connect speaker leads together or to chassis ground.
- **RCA Input Jacks**
  Connect these jacks to the line out leads on your head unit using RCA extension cables (sold separately). Be sure to observe correct channel connections; Left to Left, Right to Right, Front to Front, and Rear to Rear.
- **Ground Lead (Black)**
  Connect this lead securely to a clean, bare metal spot on the vehicle's chassis. Verify this point to be a true ground by checking for continuity between that point and the negative (–) terminal of the vehicle's battery. Ground all your audio components to the same point on the chassis to prevent ground loops.
- **Battery Lead (Yellow)**
  Connect this lead directly to the positive (+) terminal of the vehicle's battery. *Do not connect this lead to wiring in the vehicle's electrical system.* Be sure to add a 40 amp (or two 20 A fuses in parallel) as close as possible to the battery's positive (+) terminal. This fuse will protect your vehicle's electrical system in case of a short circuit. If you need to extend this lead, the wire gauge should be 8 AWG or larger.

## CONNECTIONS

- **Remote Turn-On Lead (Blue/White)**

  Connect this lead to the remote turn-on or power antenna (positive trigger, (+) 12V only) lead of your head unit.

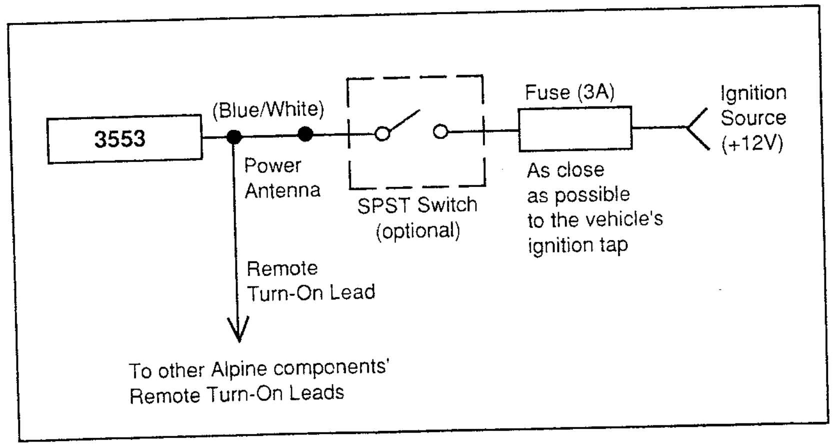
  Please check your head unit for the conditions listed below:

  a. The head unit does not have a remote turn-on or power antenna lead.

  b. The head unit's power antenna lead is activated only when the radio is on (turns off in the tape or CD Mode).

  c. The head unit's power antenna lead is logic level output (+) 5V, negative trigger (grounding type), or cannot sustain (+) 12V when connected to other equipment in addition to the vehicle's power antenna. If any of the above conditions exist, the remote turn-on lead of your 3553 must be connected to a switched power source (ignition) in the vehicle. Be sure to use a 3A fuse as close as possible to this ignition tap. Using this connection method, the 3553 will turn on and stay on as long as the ignition switch is on.

If this is objectionable, a SPST (Single pole, Single Throw) switch, in addition to the 3A fuse mentioned above, may be installed in-line on the 3553 turn-on lead. This switch will then be used to turn on (and off) the 3553. Therefore, the switch should be mounted so that is accessible by the driver. Make sure the switch is turned off when the vehicle is not running. Otherwise, the amplifier will remain on and drain the battery.

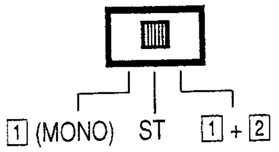


## SWITCH SETTINGS

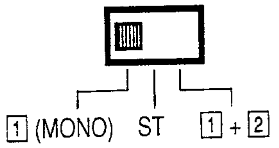
**Input Mode Selector Switches ④ and ⑦**

The switch modes shown are for CH1/2. Same explanations apply to mode selection for CH3/4.

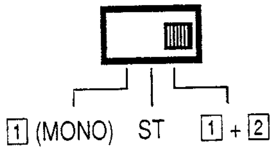
a) Set to the "ST" position (center) when the two channels are used in stereo.



b) Set to the "$\boxed{1}$ (MONO)" position when the two channels are used for one channel of a stereo or bridged system.

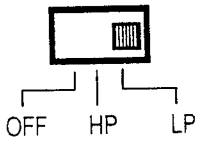


c) Set to the "$\boxed{1}$ + $\boxed{2}$" position when the two channels are used for a subwoofer system which uses the right channel and left channel signals summed.

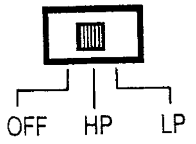


**Active Dividing Network Mode Selector Switches ③ and ⑥**

a) Set to the "LP" position when the amplifier is used for the low-pass (subwoofer) system. The frequencies higher than 80 Hz will be cut (at a rate of 18 dB per octave).

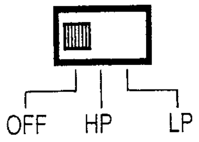


b) Set to the "HP" position when the 3553 is used for the high-pass (tweeter/midrange) system. The frequencies lower than 80 Hz will be cut (at a rate of 18 dB per octave).



## SWITCH SETTINGS

c) Set to the "OFF" position when the 3553 is used for the regular ster system with full-range speakers. The full bandwidth will be output w cutting the high or low frequencies



**Input Gain Adjustment Controls ② and ⑤**

After setting your head unit's volume control 1/4 of a turn down fror maximum output level, rotate the Input Gain Adjustment Controls ② an with a #0 flat blade screwdriver and adjust the input gain to the point w there is maximum volume with no distortion.

**Status Monitor**

This indicator lights in green when the power is on. The 3553 has b protection circuitry. If, for some reason, this protection circuit is activa the indicator turns orange. If this happens, turn the system off, find the of the problem and remedy the situation. This includes checking all yo connections and wiring. If the indicator remains orange when the syste turned on, consult your authorized Alpine dealer.

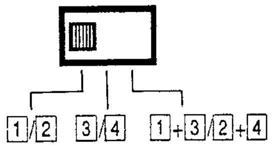
**NOTE:**
The indicator will illuminate in orange for a few seconds when the power is turned on as the turn on muting circuit is activated. This is normal.

**Input Channel Selector Switch ⑧ (CH 3/4)**

a) Setting this switch to $\boxed{1}$/$\boxed{2}$ will send the signal at the inputs of CH CH3/4 of the 3553. This eliminate the need for Y-adaptors when us head unit with a single pair of pre-amp output.

b) Set this switch to $\boxed{3}$/$\boxed{4}$ to have the inputs of CH3/4 accept indepen input signals. An example of this application would be the use of a unit with dual pre-amp outputs.

c) Setting this switch to $\boxed{1}$+$\boxed{3}$/$\boxed{2}$+$\boxed{4}$ will sum the CH1 & CH3 input a send it to CH3 while the CH2 & CH4 inputs are summed and sent t CH4. When used with a dual-preamp output head unit, this will pro non-fading (constant bass) subwoofer output with fadable front and output going to a separate Satellite amplifier.

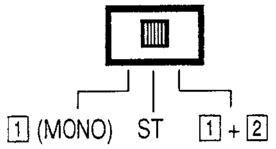


## SWITCH SETTINGS

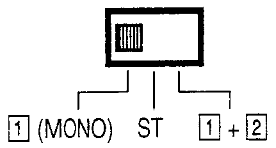
**ector Switches ④ and ⑦**

odes shown are for CH1/2. Same explanations apply to or CH3/4.

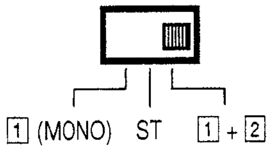
T" position (center) when the two channels are used in



(MONO)" position when the two channels are used for one stereo or bridged system.

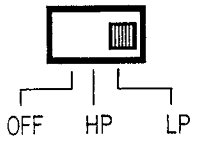


+ [2]" position when the two channels are used for a stem which uses the right channel and left channel signals

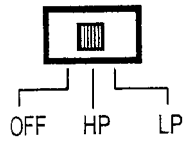


**Network Mode Selector Switches ③ and ⑥**

P" position when the amplifier is used for the low-pass system. The frequencies higher than 80 Hz will be cut (at a per octave).

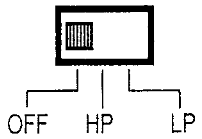


P" position when the 3553 is used for the high-pass (tweeter/ stem. The frequencies lower than 80 Hz will be cut (at a rate octave).



## SWITCH SETTINGS

c) Set to the "OFF" position when the 3553 is used for the regular stereo system with full-range speakers. The full bandwidth will be output without cutting the high or low frequencies



**Input Gain Adjustment Controls ② and ⑤**

After setting your head unit's volume control 1/4 of a turn down from the maximum output level, rotate the Input Gain Adjustment Controls ② and ⑤ with a #0 flat blade screwdriver and adjust the input gain to the point where there is maximum volume with no distortion.

**Status Monitor**

This indicator lights in green when the power is on. The 3553 has built-in protection circuitry. If, for some reason, this protection circuit is activated, the indicator turns orange. If this happens, turn the system off, find the cause of the problem and remedy the situation. This includes checking all your connections and wiring. If the indicator remains orange when the system is turned on, consult your authorized Alpine dealer.

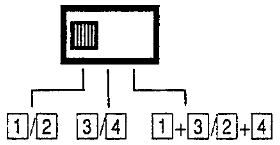
**NOTE:**
The indicator will illuminate in orange for a few seconds when the power is turned on as the turn on muting circuit is activated. This is normal.

**Input Channel Selector Switch ⑧ (CH 3/4)**

a) Setting this switch to [1]/[2] will send the signal at the inputs of CH1/2 to CH3/4 of the 3553. This eliminate the need for Y-adaptors when using a head unit with a single pair of pre-amp output.

b) Set this switch to [3]/[4] to have the inputs of CH3/4 accept independent input signals. An example of this application would be the use of a head unit with dual pre-amp outputs.

c) Setting this switch to [1]+[3]/[2]+[4] will sum the CH1 & CH3 input and send it to CH3 while the CH2 & CH4 inputs are summed and sent to CH4. When used with a dual-preamp output head unit, this will provide a non-fading (constant bass) subwoofer output with fadable front and rear output going to a separate Satellite amplifier.

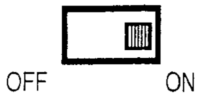


## SWITCH SETTINGS

**Acoustic Compensation Selector Switch**

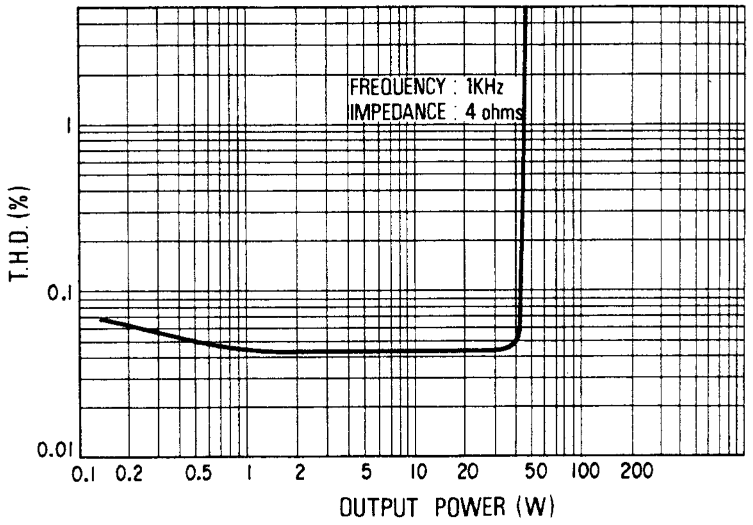
a) Turn this switch on to compensate for the loss of low bass and to reduce midbass boominess.

b) Listen to the system with the switch in both the ON and OFF positions. Since the response of the system can vary depending on vehicle type, interior size, and other characteristics of the listening area, choose the position that provides the best sound reproduction.

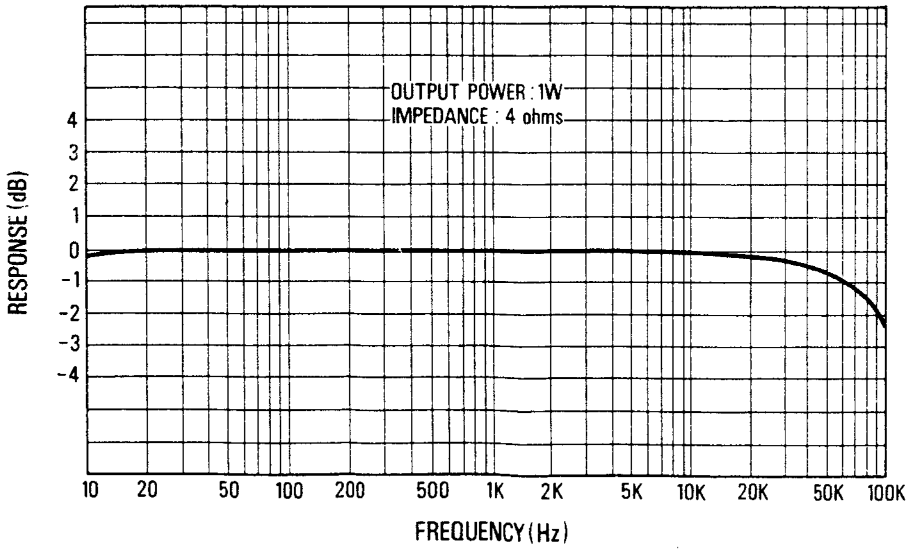


## CHARACTERISTIC CURVES

POWER VS. DISTORTION CURVE



FREQUENCY RESPONSE CURVE



# Disassembly Instructions

## 1. Removal of AMP P.C.Board

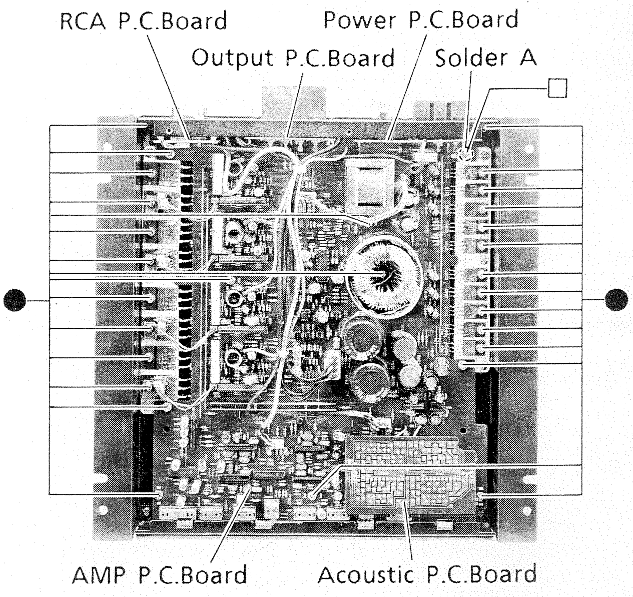
(1) After removal of Bottom Cover, remove twenty-nine screws marked "●", and remove Solder A and a screw marked "□" as shown in Figure 1.

(2) AMP P.C.Board with Rear Chassis and Power P.C.Board, Output P.C.Board, RCA P.C.Board can be removed completely.

(3) After removal of a Fuse, remove nine screws marked "■" and two Hooks as shown in Figure 2 and 3.

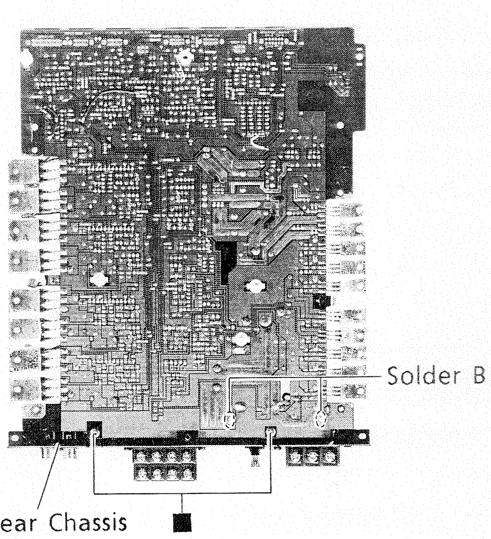
(4) After removal of Rear Chassis, remove Solder B as shown in Figure 2.

(5) AMP P.C.Board with Power P.C.Board, Output P.C.Board, RCA P.C.Board and Acoustic P.C.Board can be removed completely.



RCA P.C.Board
Power P.C.Board
Output P.C.Board
Solder A
□
●
●
AMP P.C.Board
Acoustic P.C.Board

Figure 1



Solder B
Rear Chassis
■

Figure 2

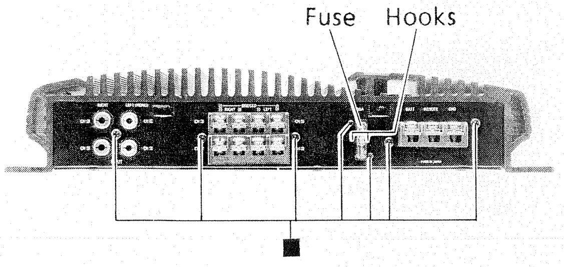


Figure 3

# Disassembly Instructions

## 1. Removal of AMP P.C.Board

(1) After removal of Bottom Cover, remove twenty-nine screws marked "●", and remove Solder A and a screw marked "□" as shown in Figure 1.

(2) AMP P.C.Board with Rear Chassis and Power P.C.Board, Output P.C.Board, RCA P.C.Board can be removed completely.

(3) After removal of a Fuse, remove nine screws marked "■" and two Hooks as shown in Figure 2 and 3.

(4) After removal of Rear Chassis, remove Solder B as shown in Figure 2.

(5) AMP P.C.Board with Power P.C.Board, Output P.C.Board, RCA P.C.Board and Acoustic P.C.Board can be removed completely.

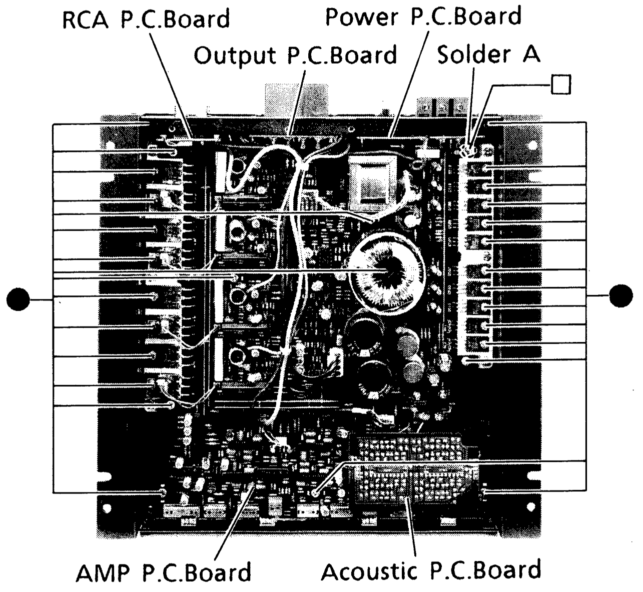

RCA P.C.Board
Power P.C.Board
Output P.C.Board
Solder A
□
●
●
AMP P.C.Board
Acoustic P.C.Board

Figure 1

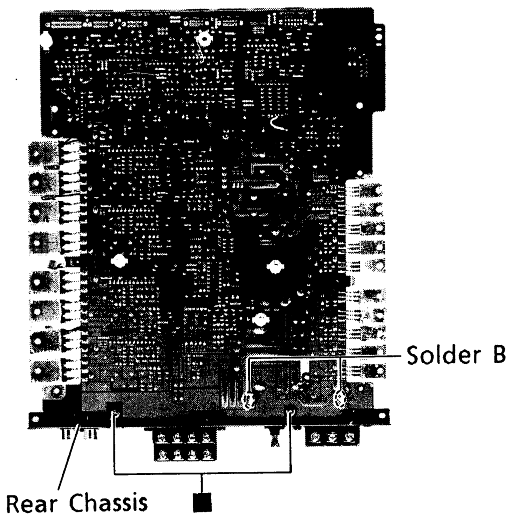

Solder B
Rear Chassis
■

Figure 2

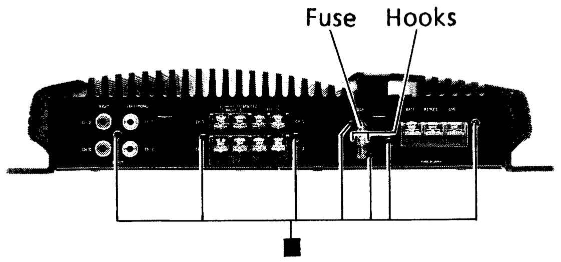
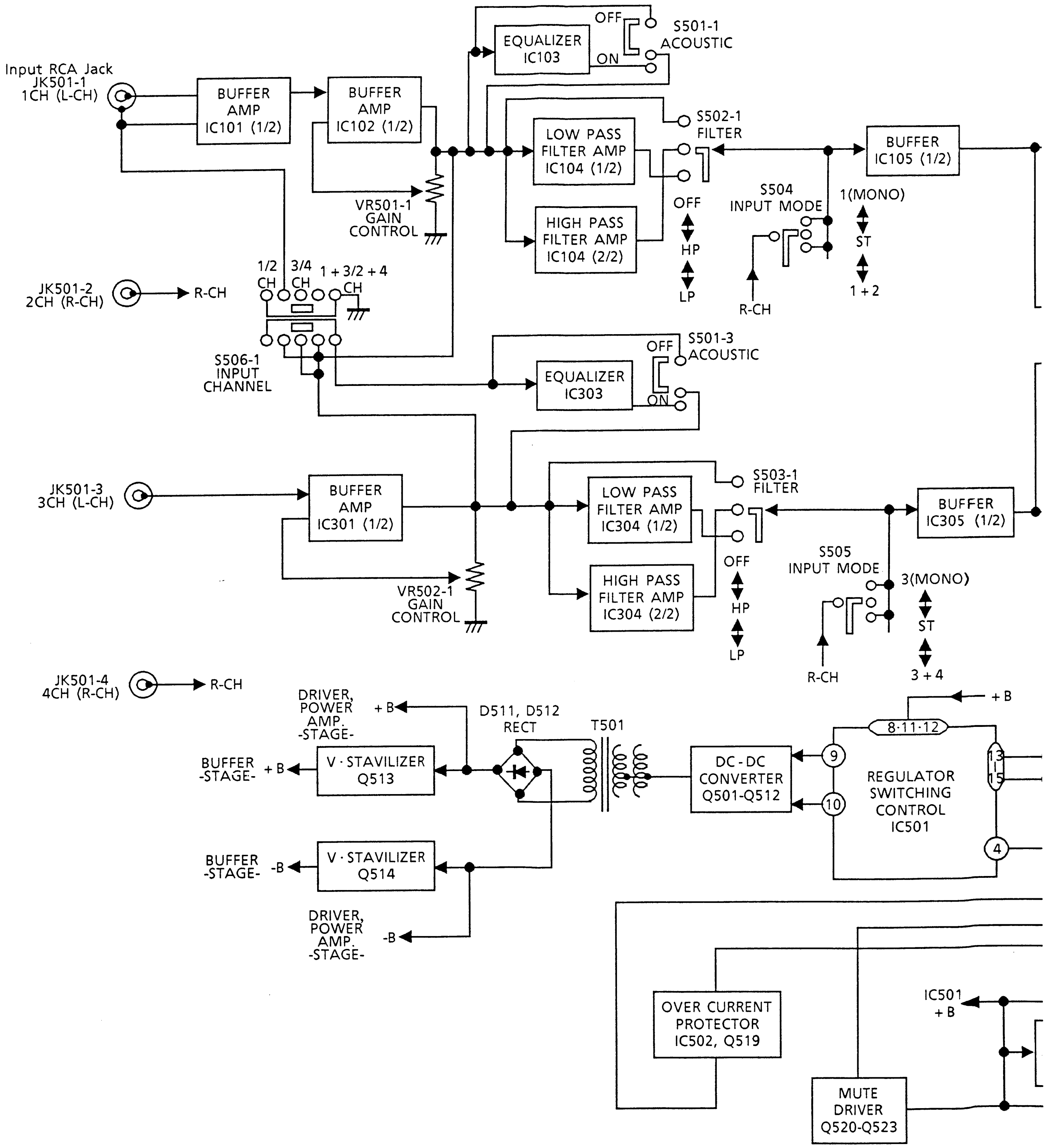


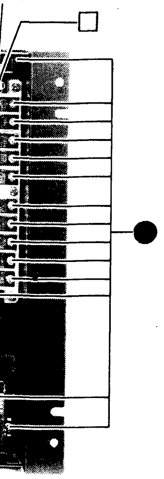
Figure 3

# Block Diagram


Input RCA Jack
JK501-1
1CH (L-CH)
BUFFER AMP IC101 (1/2)
BUFFER AMP IC102 (1/2)
EQUALIZER IC103
OFF
ON
S501-1
ACOUSTIC
S502-1
FILTER
LOW PASS FILTER AMP IC104 (1/2)
HIGH PASS FILTER AMP IC104 (2/2)
BUFFER IC105 (1/2)
VR501-1
GAIN
CONTROL
OFF
HP
LP
S504
INPUT MODE
1(MONO)
ST
1+2
R-CH
JK501-2
2CH (R-CH)
R-CH
1/2 CH
3/4 CH
1+3/2+4 CH
S506-1
INPUT
CHANNEL
EQUALIZER IC303
S501-3
ACOUSTIC
JK501-3
3CH (L-CH)
BUFFER AMP IC301 (1/2)
S503-1
FILTER
LOW PASS FILTER AMP IC304 (1/2)
HIGH PASS FILTER AMP IC304 (2/2)
BUFFER IC305 (1/2)
VR502-1
GAIN
CONTROL
S505
INPUT MODE
3(MONO)
ST
3+4
JK501-4
4CH (R-CH)
R-CH
DRIVER, POWER AMP. -STAGE-
+B
D511, D512
RECT
T501
BUFFER -STAGE-
V·STAVILIZER Q513
DC-DC CONVERTER Q501-Q512
9
10
8·11·12
REGULATOR SWITCHING CONTROL IC501
13
15
4
+B
BUFFER -STAGE-
-B
V·STAVILIZER Q514
DRIVER, POWER AMP. -STAGE-
-B
OVER CURRENT PROTECTOR IC502, Q519
IC501 +B
MUTE DRIVER Q520-Q523

# Block Diagram

oard
der A



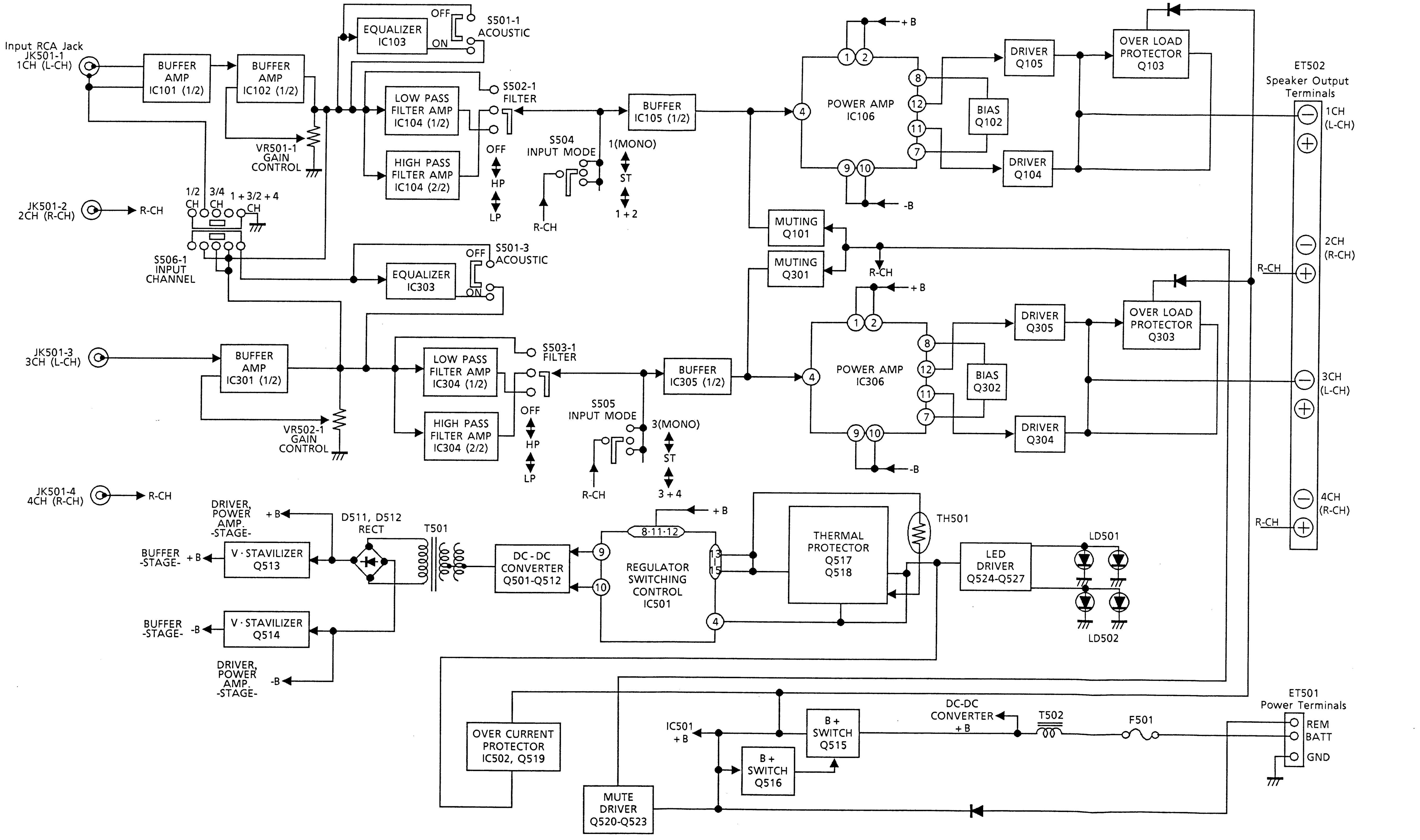
Board

Figure 1

Solder B

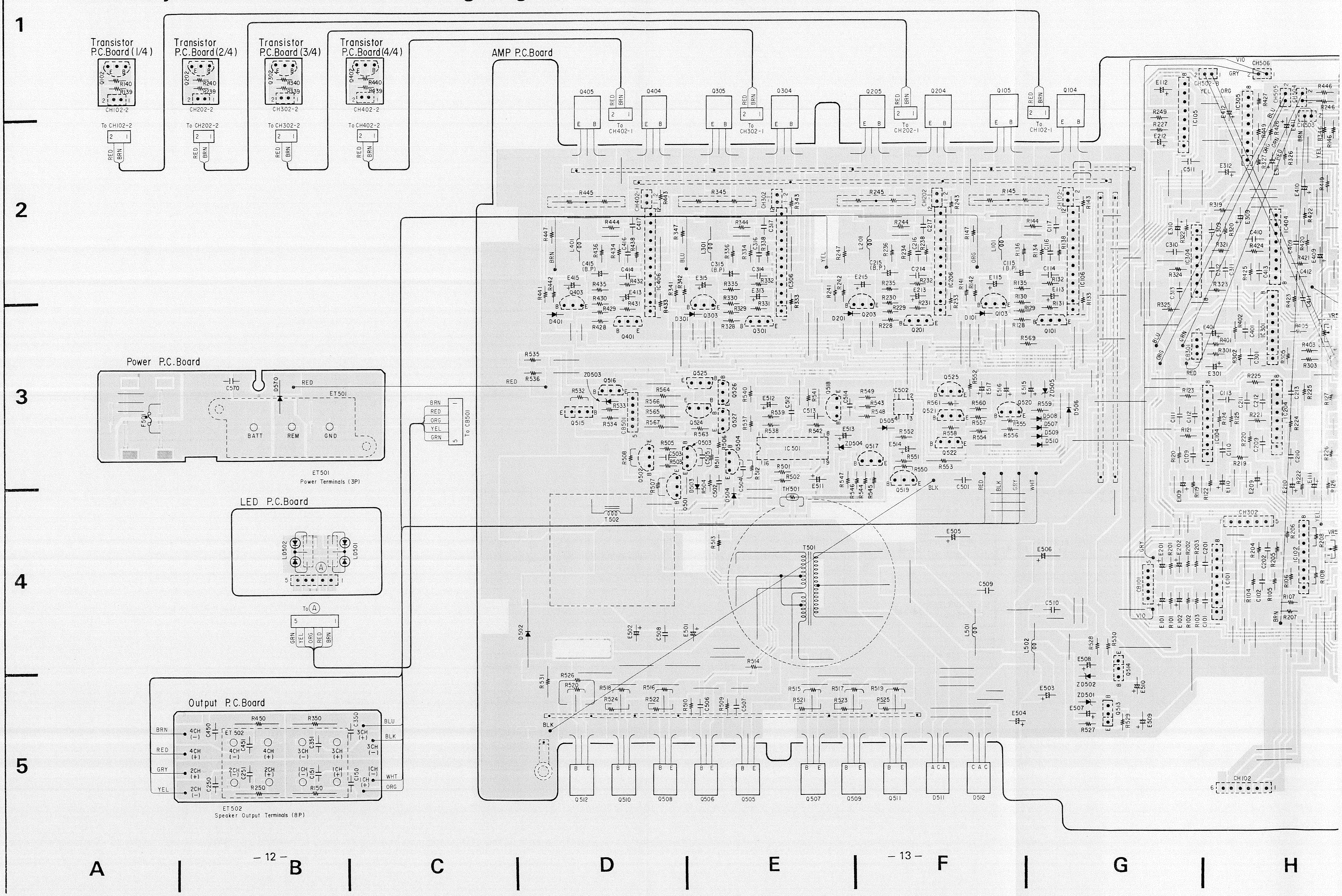
Figure 2

Figure 3

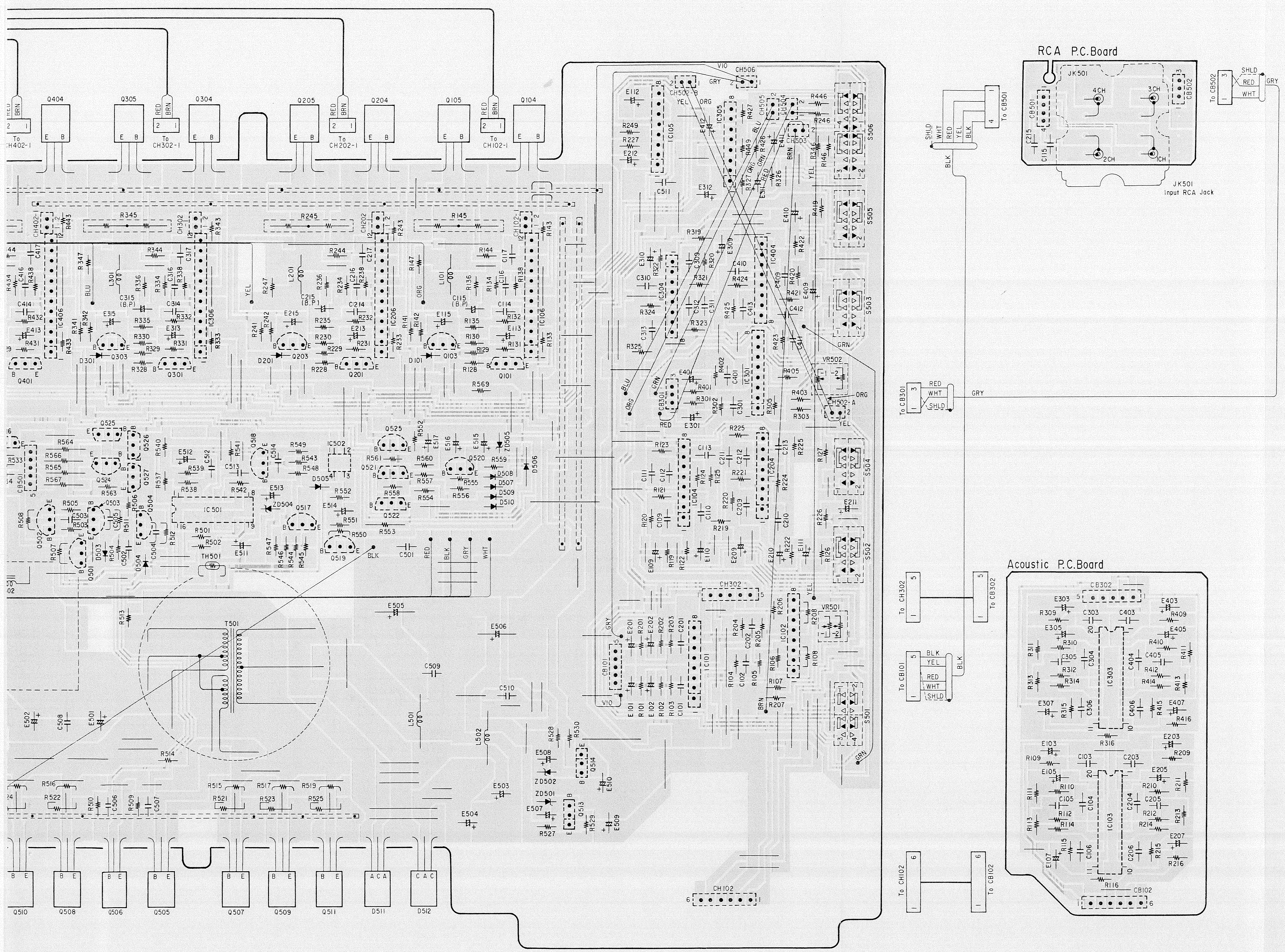

Input RCA Jack
JK501-1
1CH (L-CH)
BUFFER AMP IC101 (1/2)
BUFFER AMP IC102 (1/2)
EQUALIZER IC103
OFF
ON
S501-1 ACOUSTIC
LOW PASS FILTER AMP IC104 (1/2)
HIGH PASS FILTER AMP IC104 (2/2)
S502-1 FILTER
OFF
HP
LP
VR501-1 GAIN CONTROL
BUFFER IC105 (1/2)
S504 INPUT MODE
1(MONO)
ST
1 + 2
R-CH
JK501-2
2CH (R-CH)
R-CH
1/2 CH
3/4 CH
1 + 3/2 + 4 CH
S506-1 INPUT CHANNEL
EQUALIZER IC303
OFF
ON
S501-3 ACOUSTIC
JK501-3
3CH (L-CH)
BUFFER AMP IC301 (1/2)
VR502-1 GAIN CONTROL
LOW PASS FILTER AMP IC304 (1/2)
HIGH PASS FILTER AMP IC304 (2/2)
S503-1 FILTER
OFF
HP
LP
BUFFER IC305 (1/2)
S505 INPUT MODE
3(MONO)
ST
3 + 4
R-CH
JK501-4
4CH (R-CH)
R-CH
+B
POWER AMP IC106
DRIVER Q105
DRIVER Q104
BIAS Q102
OVER LOAD PROTECTOR Q103
-B
MUTING Q101
MUTING Q301
R-CH
+B
POWER AMP IC306
DRIVER Q305
DRIVER Q304
BIAS Q302
OVER LOAD PROTECTOR Q303
-B
ET502
Speaker Output Terminals
1CH (L-CH)
2CH (R-CH)
3CH (L-CH)
4CH (R-CH)
R-CH
R-CH
DRIVER, POWER AMP. -STAGE-
+B
BUFFER -STAGE-
+B
V · STAVILIZER Q513
D511, D512 RECT
T501
DC - DC CONVERTER Q501-Q512
BUFFER -STAGE-
-B
V · STAVILIZER Q514
DRIVER, POWER AMP. -STAGE-
-B
+B
8 · 11 · 12
REGULATOR SWITCHING CONTROL IC501
THERMAL PROTECTOR Q517 Q518
TH501
LED DRIVER Q524-Q527
LD501
LD502
OVER CURRENT PROTECTOR IC502, Q519
IC501 +B
B + SWITCH Q515
B + SWITCH Q516
MUTE DRIVER Q520-Q523
DC-DC CONVERTER +B
T502
F501
ET501
Power Terminals
REM
BATT
GND

# Parts Layout on P.C.Boards and Wiring Diagram

All P.C.Boards viewed from soldered side.

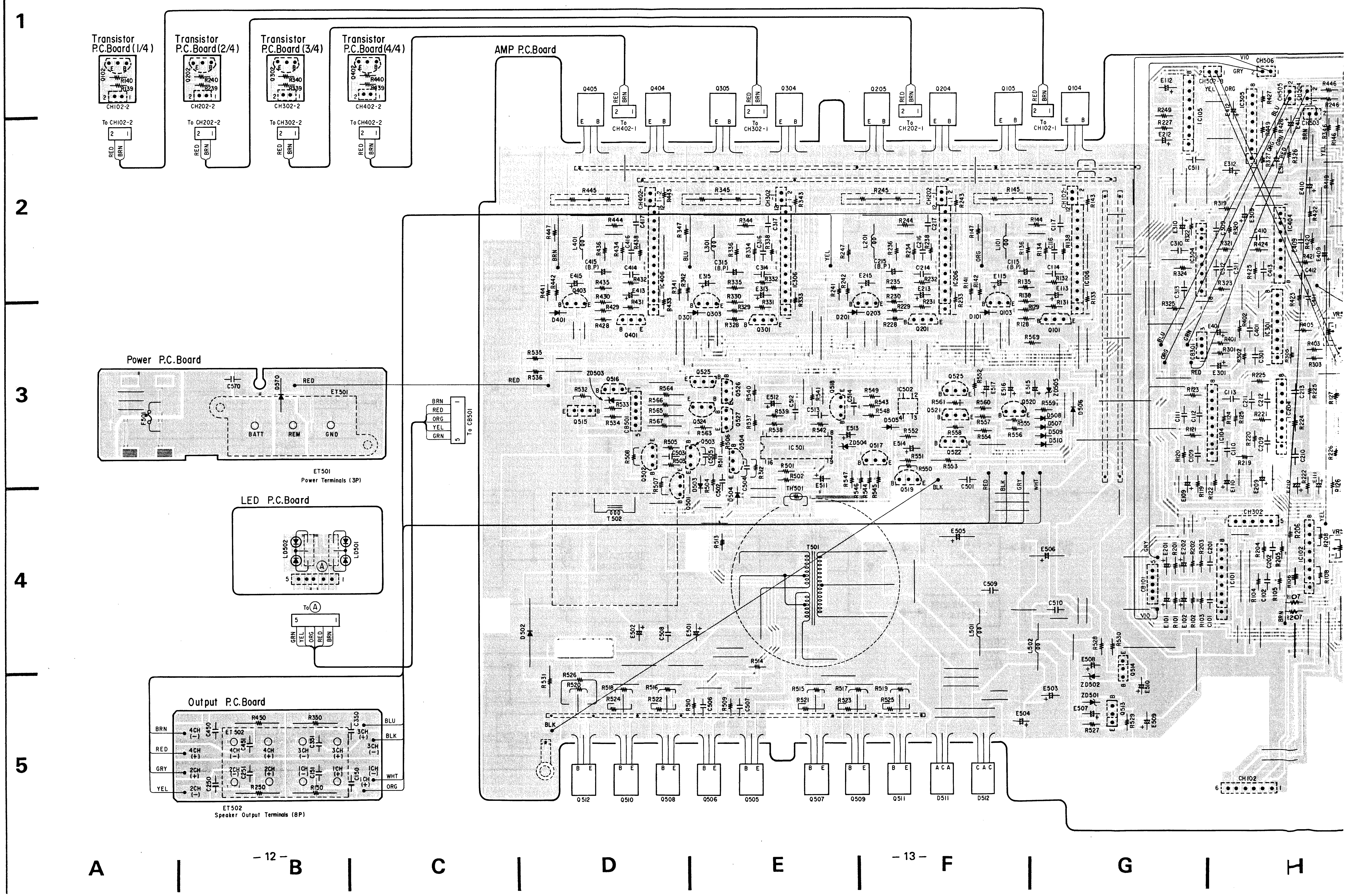

1
2
3
4
5
Transistor P.C.Board (1/4)
Transistor P.C.Board (2/4)
Transistor P.C.Board (3/4)
Transistor P.C.Board (4/4)
AMP P.C.Board
To CH102-2
To CH202-2
To CH302-2
To CH402-2
To CH402-1
To CH302-1
To CH202-1
To CH102-1
Power P.C.Board
BATT
REM
GND
ET501
Power Terminals (3P)
To CB501
LED P.C.Board
L0502
L0501
To A
Output P.C.Board
ET502
Speaker Output Terminals (8P)
BRN
RED
ORG
YEL
GRN
GRY
BLU
BLK
WHT
IC501
T501
T502
TH501
Q512
Q510
Q508
Q506
Q505
Q507
Q509
Q511
D511
D512
Q405
Q404
Q305
Q304
Q205
Q204
Q105
Q104
CH102
CH302
A
B
C
D
E
F
G
H

ll P.C.Boards viewed from soldered side.

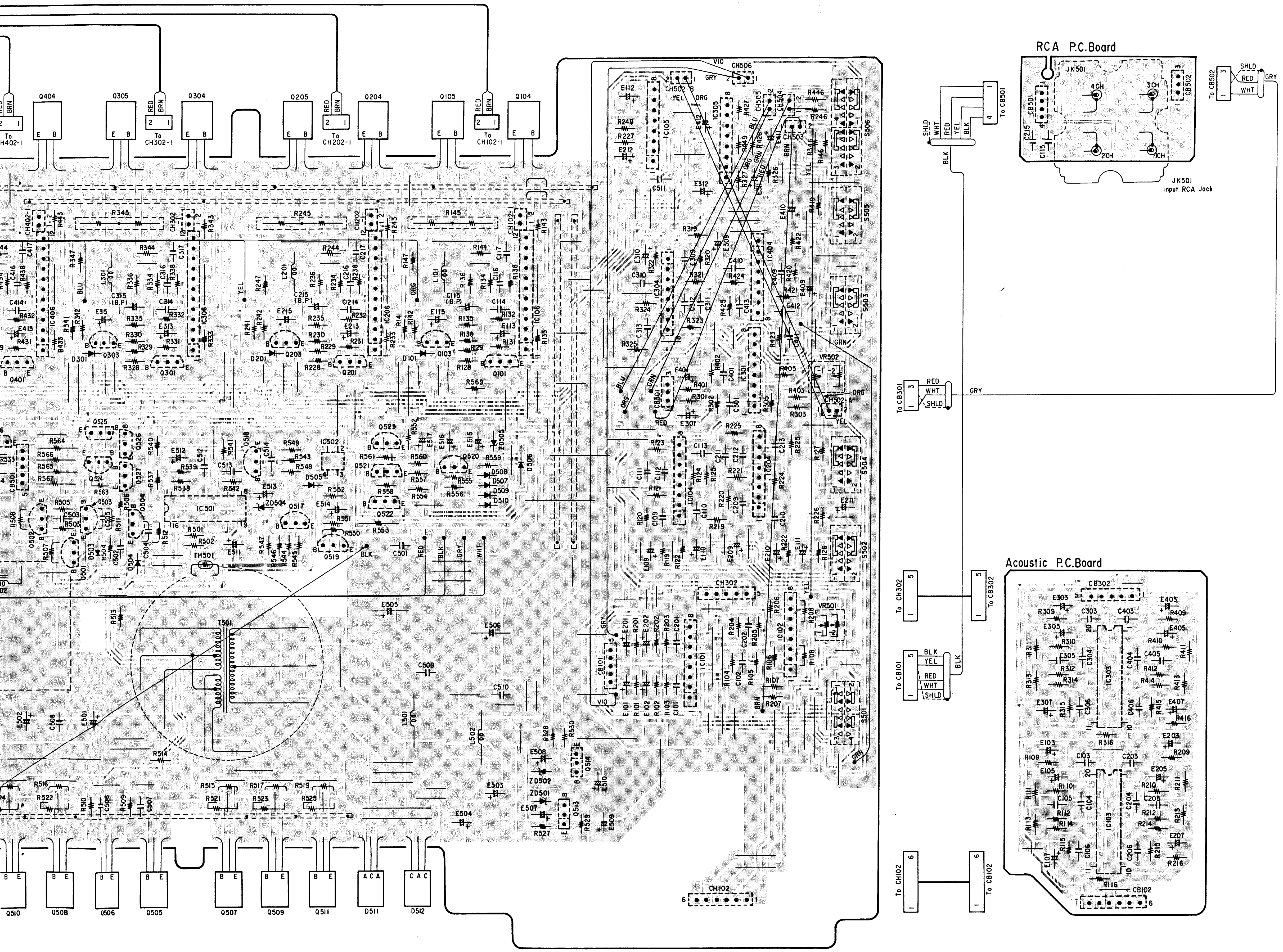

RCA P.C.Board
JK501
Input RCA Jack
4CH
3CH
2CH
1CH
CB501
CB502
To CB501
To CB502
SHLD
WHT
RED
YEL
BLK
GRY
Acoustic P.C.Board
CB302
CB102
IC303
IC103
To CB301
To CH302
To CB302
To CB101
To CH102
To CB102
Q404
Q305
Q304
Q205
Q204
Q105
Q104
To CH402-1
To CH302-1
To CH202-1
To CH102-1
Q510
Q508
Q506
Q505
Q507
Q509
Q511
D511
D512
T501
TH501
IC501
IC502
IC101
IC102
IC104
IC105
IC204
IC301
IC304
IC404
VR501
VR502
S501
S502
S503
S504
S505
S506
CH102
CH302
CH502-A
CH502-B
CH503
CH504
CH505
CH506
CB101
V10
E
F
G
H
I
J
K

## Parts Layout on P.C.Boards and Wiring Diagram

All P.C.Boards viewed from soldered side.


Transistor P.C.Board (1/4)
Transistor P.C.Board (2/4)
Transistor P.C.Board (3/4)
Transistor P.C.Board (4/4)
AMP P.C.Board
Power P.C.Board
BATT
REM
GND
ET501
ET501 Power Terminals (3P)
To CB501
LED P.C.Board
L0502
L0501
To Ⓐ
Output P.C.Board
ET502 Speaker Output Terminals (8P)
To CH102-2
To CH202-2
To CH302-2
To CH402-2
To CH402-1
To CH302-1
To CH202-1
To CH102-1
T501
T502
IC501
BRN
RED
ORG
YEL
GRN
GRY
BLU
BLK
WHT
1
2
3
4
5
A
B
C
D
E
F
G
H

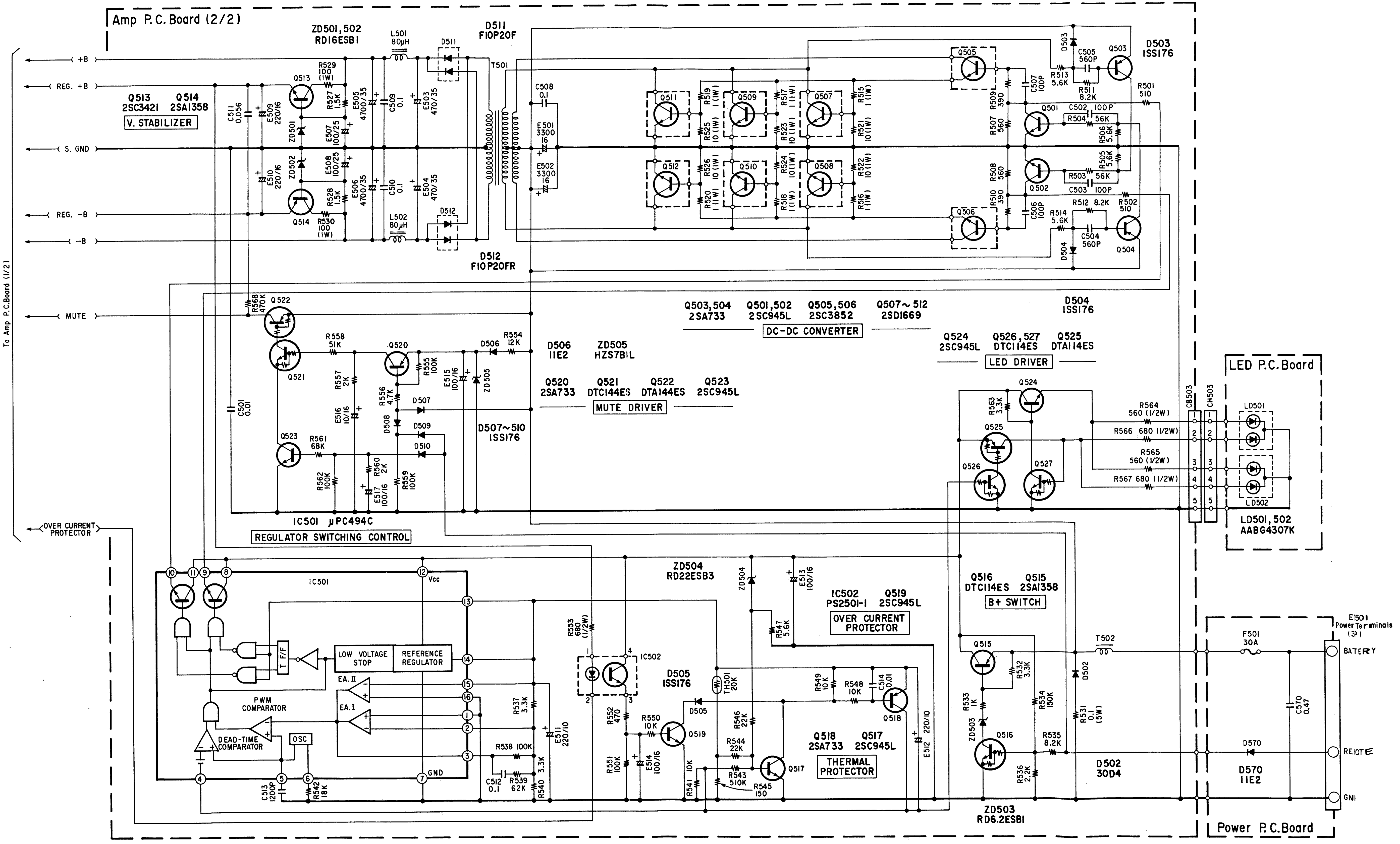
ll P.C.Boards viewed from soldered side.


RCA P.C.Board
JK501
Input RCA Jack
4CH
3CH
2CH
1CH
CB501
CB502
To CB502
To CB501
SHLD
RED
WHT
GRY
BLK
YEL
To CB301
To CH302
To CB302
To CB101
To CH102
To CB102
Acoustic P.C.Board
CB302
CB102
IC303
IC103
To CH402-1
To CH302-1
To CH202-1
To CH102-1
Q404
Q305
Q304
Q205
Q204
Q105
Q104
Q510
Q508
Q506
Q505
Q507
Q509
Q511
D511
D512
T501
IC501
CH102
CH302
CH506
CB101
CB301
VR501
VR502
S501
S502
S503
S504
S505
S506

# Schematic Diagram (1/2)

NOTE:
1. All resistance values are in ohms. K= 1,000 M= 1,000,000
2. All capacitance values are in microfarads. P= 1/1,000,000

| IC | IC501 | IC502 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Transistor (Q) | Q522 Q521 Q513 Q514 Q523<br>Q520 | Q511 Q512 Q519 | Q509 Q510 Q517 | Q507 Q508 | Q518 | Q505 Q506 Q515 Q516 | Q501 Q502 Q524 Q527 Q525 Q526 | Q503 Q504 |



1
2
3
4
5
A
B
C
D
E
F
G
H
Amp P.C. Board (2/2)
To Amp P.C.Board (1/2)
+B
REG. +B
S. GND
REG. -B
-B
MUTE
OVER CURRENT PROTECTOR
Q513 2SC3421
Q514 2SA1358
V. STABILIZER
ZD501,502 RD16ESB1
L501 80μH
L502 80μH
D511 F10P20F
D512 F10P20FR
T501
R529 100 (1W)
R530 100 (1W)
R527 1.5K
R528 1.5K
C511 0.056
E509 220/16
E510 220/16
ZD501
ZD502
E507 100/25
E508 100/25
E505 4700/35
E506 4700/35
C509 0.1
C510 0.1
E503 470/35
E504 470/35
C508 0.1
E501 3300 16
E502 3300 16
Q511
Q512
Q509
Q510
Q507
Q508
R519 1 (1W)
R525 10 (1W)
R526 10 (1W)
R520 1 (1W)
R517 1 (1W)
R523 10 (1W)
R524 10 (1W)
R518 1 (1W)
R515 1 (1W)
R521 10 (1W)
R522 10 (1W)
R516 1 (1W)
Q505
Q506
Q501
Q502
Q503
Q504
D503
D503 1SS176
D504
C505 560P
C504 560P
R513 5.6K
R514 5.6K
R511 8.2K
R512 8.2K
R501 510
R502 510
C507 100P
C506 100P
R509 390
R510 390
R507 560
R508 560
C502 100P
C503 100P
R504 56K
R503 56K
R506 5.6K
R505 5.6K
Q503,504 2SA733
Q501,502 2SC945L
Q505,506 2SC3852
Q507~512 2SD1669
DC-DC CONVERTER
D504 1SS176
Q522
Q521
Q520
Q523
R568 470K
R558 51K
R557 2K
R556 4.7K
R555 100K
R554 12K
D506
E515 100/16
ZD505
D507
D508
D509
D510
E516 10/16
C501 0.01
R561 68K
R562 100K
R560 2K
E517 100/16
R559 100K
D506 11E2
ZD505 HZS7B1L
D507~510 1SS176
Q520 2SA733
Q521 DTC144ES
Q522 DTA144ES
Q523 2SC945L
MUTE DRIVER
IC501 μPC494C
REGULATOR SWITCHING CONTROL
Q524 2SC945L
Q526,527 DTC114ES
Q525 DTA114ES
LED DRIVER
Q524
Q525
Q526
Q527
R563 3.3K
R564 560 (1/2W)
R566 680 (1/2W)
R565 560 (1/2W)
R567 680 (1/2W)
CB503
CH503
LED P.C.Board
LD501
LD502
LD501,502 AABG4307K
IC501
Vcc
GND
LOW VOLTAGE STOP
REFERENCE REGULATOR
T F/F
EA.II
EA.I
PWM COMPARATOR
DEAD-TIME COMPARATOR
OSC
R537 3.3K
R538 100K
E511 220/10
C512 0.1
R539 62K
R540 3.3K
C513 1200P
R542 18K
R553 680 (1/2W)
IC502
R552 470
R551 100K
R550 10K
E514 100/16
Q519
R541 10K
D505
D505 1SS176
ZD504
ZD504 RD22ESB3
E513 100/16
R547 5.6K
TH501 20K
R546 22K
R544 22K
R543 510K
R545 150
Q517
R549 10K
R548 10K
C514 0.01
Q518
E512 220/10
IC502 PS2501-1
Q519 2SC945L
OVER CURRENT PROTECTOR
Q518 2SA733
Q517 2SC945L
THERMAL PROTECTOR
Q516 DTC114ES
Q515 2SA1358
B+ SWITCH
Q515
Q516
R532 3.3K
R533 1K
ZD503
R534 150K
R535 8.2K
R536 2.2K
ZD503 RD6.2ESB1
T502
D502
R531 0.1 (5W)
D502 30D4
F501 30A
C570 0.47
D570
D570 11E2
E501 Power Terminals (3P)
BATTERY
REMOTE
GND
Power P.C.Board

are in ohms. K= 1,000 M= 1,000,000
s are in microfarads. P= 1/1,000,000

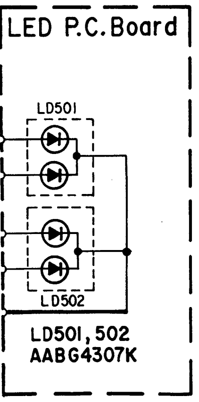
IC502

| Pin | Voltage |
|---|---|
| 1 | 15.2V |
| 2 | 14.5V |
| 3 | 14.4V |
| 4 | 14.3V |

IC501

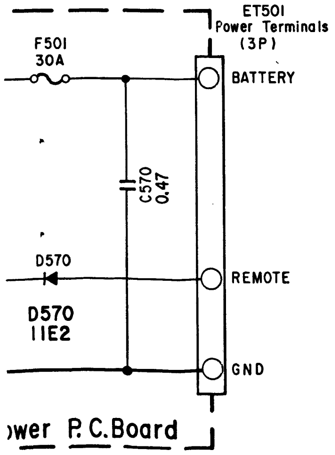
| Pin | Voltage |
|---|---|
| 1 | 0V |
| 2 | 2.5V |
| 3 | 0.1V |
| 4 | 0.01V |
| 5 | 1.7V |
| 6 | 3.76V |
| 7 | 0V |
| 8 | 14.3V |
| 9 | 6V |
| 10 | 6V |
| 11 | 14.3V |
| 12 | 14.3V |
| 13 | 5V |
| 14 | 5V |
| 15 | 5V |
| 16 | 0V |

| | B | C | E |
|---|---|---|---|
| Q501 | –0.7V | 1.5V | 0V |
| Q502 | –0.7V | 1.5V | 0V |
| Q503 | 15V | 7.4V | 14.4V |
| Q504 | 15V | 7.4V | 14.4V |
| Q505 | 0.8V | 14.4V | 0.6V |
| Q506 | 0.8V | 14.4V | 0.6V |
| Q507 | 0.36V | 14.4V | 0V |
| Q508 | 0.36V | 14.4V | 0V |
| Q509 | 0.36V | 14.4V | 0V |
| Q510 | 0.36V | 14.4V | 0V |
| Q511 | 0.36V | 14.4V | 0V |
| Q512 | 0.36V | 14.4V | 0V |
| Q513 | 15.9V | 23.6V | 15.3V |
| Q514 | –15.9V | –23.6V | –15.3V |
| Q515 | 13.7V | 14.3V | 14.4V |
| Q516 | 2.7V | 0.07V | 0V |
| Q517 | 0.035V | 5V | 0V |
| Q518 | 5V | 0.01V | 5V |
| Q519 | 0V | 4.8V | 0V |
| Q520 | 6.8V | 0.01V | 6.9V |
| Q521 | 0.01V | 14.3V | 0.01V |
| Q522 | 14.3V | 14.4V | –14.3V |
| Q523 | 0.6V | 0.01V | 0V |
| Q524 | 13.9V | 14.3V | 13.2V |
| Q525 | 0.01V | 0.005V | 14.3V |
| Q526 | 0.01V | 0.01V | 0V |
| Q527 | 0.005V | 13.9V | 0V |


LED P.C.Board
LD501
LD502
LD501,502
AABG4307K

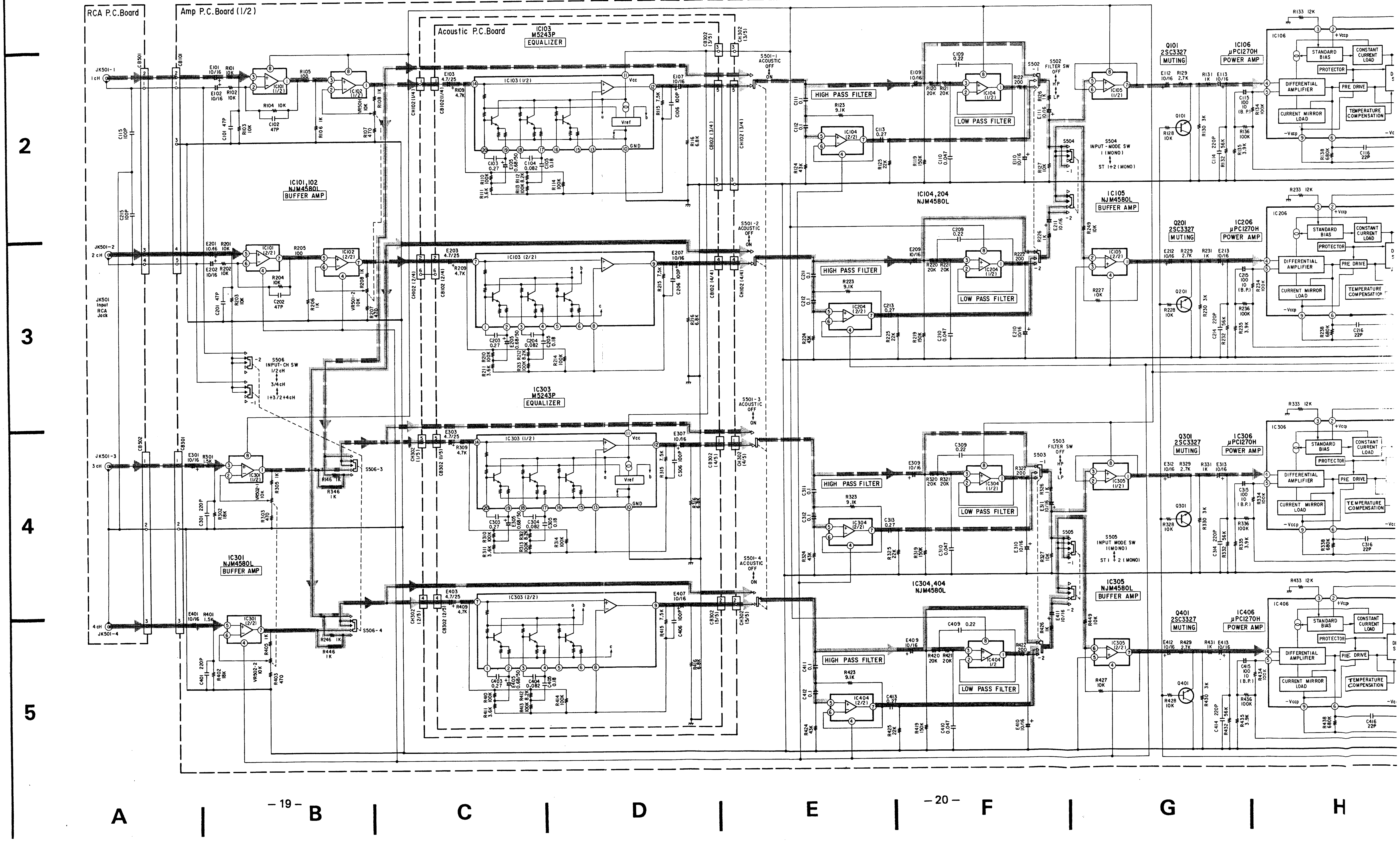
- Measuring Conditions

1. Power Supply Voltage : DC14.4V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Condition : No Signal Input

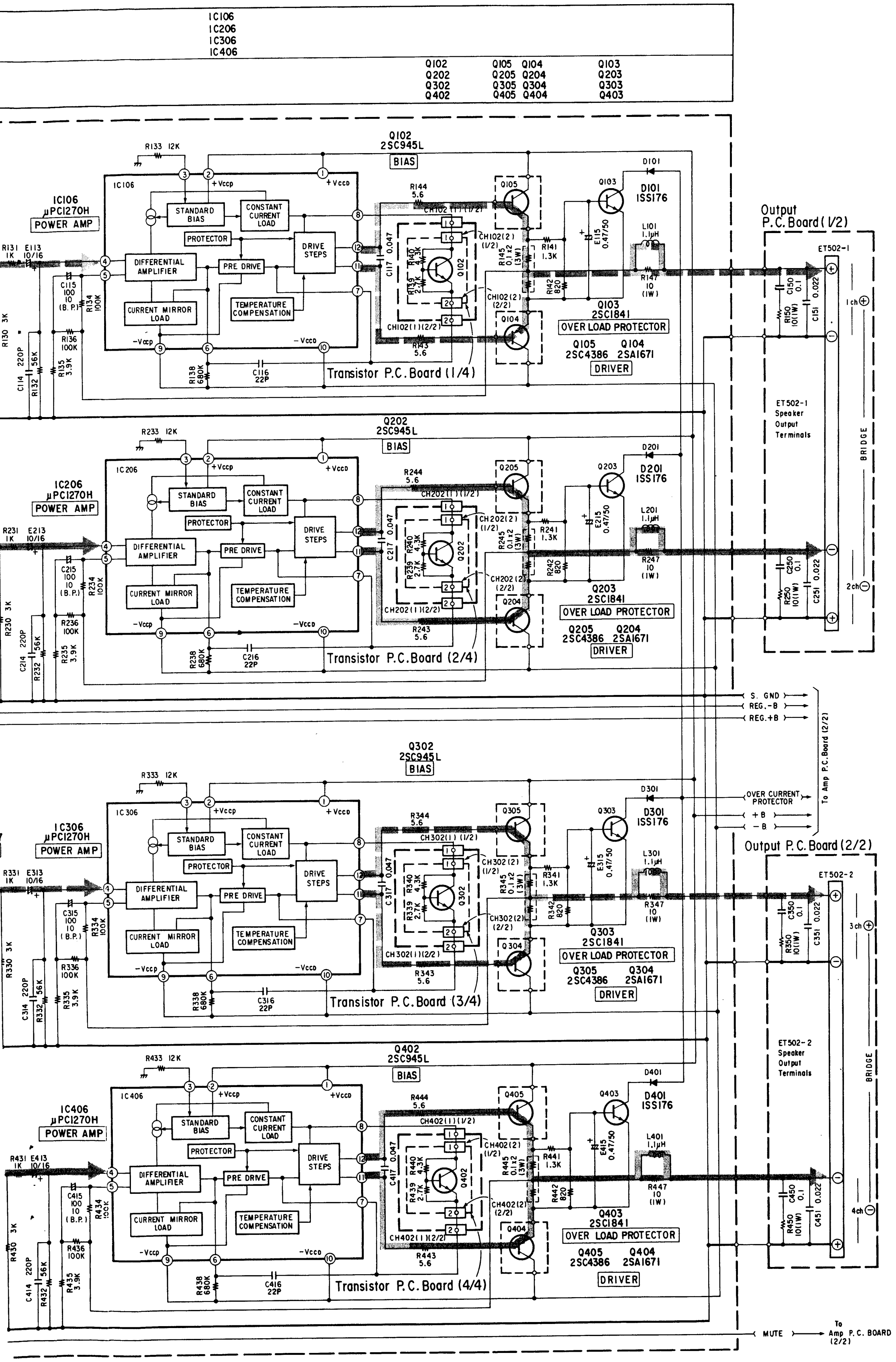

ET501
Power Terminals
(3P)
F501
30A
BATTERY
C570
0.47
D570
REMOTE
D570
11E2
GND
ɔwer P.C.Board

# Schematic Diagram (2/2)

| | | | | | | |
|---|---|---|---|---|---|---|
| IC | IC101<br>IC301 | IC102 | IC103<br>IC303 | IC104<br>IC204<br>IC304<br>IC404 | IC105<br>IC305 | IC106<br>IC206<br>IC306<br>IC406 |
| Transistor (Q) | | | | | Q101<br>Q201<br>Q301<br>Q401 | |


1
2
3
4
5
A
B
C
D
E
F
G
H
RCA P.C.Board
Amp P.C.Board (1/2)
Acoustic P.C.Board
JK501-1
1cH
JK501-2
2cH
JK501-3
3cH
4cH
JK501-4
JK501 Input RCA Jack
CB501
CB101
CB502
CB301
IC101,102
NJM4580L
BUFFER AMP
IC301
NJM4580L
BUFFER AMP
IC103
M5243P
EQUALIZER
IC303
M5243P
EQUALIZER
IC103 (1/2)
IC103 (2/2)
IC303 (1/2)
IC303 (2/2)
Vcc
Vref
GND
S506
INPUT-CH SW
1/2cH
3/4cH
1+3/2+4cH
S506-3
S506-4
S501-1
ACOUSTIC
OFF
ON
S501-2
S501-3
S501-4
CB302 (3/5)
CH302 (3/5)
CB102 (3/4)
CH102 (3/4)
CH102 (1/4)
CB102 (1/4)
CH102 (2/4)
CB102 (2/4)
CB102 (4/4)
CH102 (4/4)
CH302 (1/5)
CB302 (1/5)
CB302 (4/5)
CH302 (4/5)
CH302 (2/5)
CB302 (2/5)
CB302 (5/5)
CH302 (5/5)
HIGH PASS FILTER
LOW PASS FILTER
IC104,204
NJM4580L
IC304,404
NJM4580L
S502
FILTER SW
OFF
HP
LP
S503
FILTER SW
S504
INPUT-MODE SW
1 (MONO)
ST 1+2 (MONO)
S505
INPUT MODE SW
IC105
NJM4580L
BUFFER AMP
IC305
NJM4580L
BUFFER AMP
Q101
2SC3327
MUTING
Q201
2SC3327
MUTING
Q301
2SC3327
MUTING
Q401
2SC3327
MUTING
IC106
µPC1270H
POWER AMP
IC206
µPC1270H
POWER AMP
IC306
µPC1270H
POWER AMP
IC406
µPC1270H
POWER AMP
STANDARD BIAS
CONSTANT CURRENT LOAD
PROTECTOR
DIFFERENTIAL AMPLIFIER
PRE DRIVE
CURRENT MIRROR LOAD
TEMPERATURE COMPENSATION
+Vcc
-Vccp
R133 12K
R233 12K
R333 12K
R433 12K
E101 10/16
R101 10K
E102 10/16
R102 10K
R104 10K
C102 47P
C101 47P
R103 10K
R105 100
R106 1K
VR501-1 10K
R107 470
R108 1K
C115 100P
C215 100P
E201 10/16
R201 10K
E202 10/16
R202 10K
R204 10K
C202 47P
C201 47P
R203 10K
R205 100
R206 1K
VR501-2 10K
R207 470
R208 1K
E301 10/16
R301 1.5K
C301 220P
R302 18K
R303 470
R305 1K
VR502-1 10K
R146 1K
R346 1K
E401 10/16
R401 1.5K
C401 220P
R402 18K
R403 470
R405 1K
VR502-2 10K
R246 1K
R446 1K
E103 4.7/25
R109 4.7K
C103 0.27
E105 0.68/50
C104 0.082
C105 0.18
R110 100K
R111 3.6K
R112 8.2K
R113 100K
R114 100K
R115 7.5K
C106 100P
E107 10/16
R116 6.8K
E203 4.7/25
R209 4.7K
C203 0.27
E205 0.68/50
C204 0.082
C205 0.18
R210 100K
R211 3.6K
R212 8.2K
R213 100K
R214 100K
R215 7.5K
C206 100P
E207 10/16
R216 6.8K
E303 4.7/25
R309 4.7K
C303 0.27
E305 0.68/50
C304 0.082
C305 0.18
R310 100K
R311 3.6K
R312 8.2K
R313 100K
R314 100K
R315 7.5K
C306 100P
E307 10/16
R316 6.8K
E403 4.7/25
R409 4.7K
C403 0.27
E405 0.68/50
C404 0.082
C405 0.18
R410 100K
R411 3.6K
R412 8.2K
R413 100K
R414 100K
R415 7.5K
C406 100P
E407 10/16
R416 6.8K
C111 0.1
C112 0.1
R123 9.1K
C113 0.27
R124 43K
R125 22K
E109 10/16
C109 0.22
R120 20K
R121 20K
R122 200
R119 150K
C110 0.047
E110 10/16
E111 10/16
R126 1K
R127 10K
C211 0.1
C212 0.1
R223 9.1K
C213 0.27
R224 43K
R225 22K
E209 10/16
C209 0.22
R220 20K
R221 20K
R222 200
R219 150K
C210 0.047
E210 10/16
E211 10/16
R226 1K
R227 10K
R249 10K
C311 0.1
C312 0.1
R323 9.1K
C313 0.27
R324 43K
R325 22K
E309 10/16
C309 0.22
R320 20K
R321 20K
R322 200
R319 150K
C310 0.047
E310 10/16
E311 10/16
R326 1K
R327 10K
C411 0.1
C412 0.1
R423 9.1K
C413 0.27
R424 43K
R425 22K
E409 10/16
C409 0.22
R420 20K
R421 20K
R422 200
R419 150K
C410 0.047
E410 10/16
E411 10/16
R426 1K
R427 10K
R449 10K
E112 10/16
R129 2.7K
R131 1K
E113 10/16
C115 100 10 (B.P.)
R134 100K
R128 10K
R130 3K
C114 220P
R132 56K
R136 100K
R135 3.9K
R138 680K
C116 22P
E212 10/16
R229 2.7K
R231 1K
E213 10/16
C215 100 10 (B.P.)
R234 100K
R228 10K
R230 3K
C214 220P
R232 56K
R236 100K
R235 3.9K
R238 680K
C216 22P
E312 10/16
R329 2.7K
R331 1K
E313 10/16
C315 100 10 (B.P.)
R334 100K
R328 10K
R330 3K
C314 220P
R332 56K
R336 100K
R335 3.9K
R338 680K
C316 22P
E412 10/16
R429 2.7K
R431 1K
E413 10/16
C415 100 10 (B.P.)
R434 100K
R428 10K
R430 3K
C414 220P
R432 56K
R436 100K
R435 3.9K
R438 680K
C416 22P

NOTE:
1. All resistance values are in ohms. K= 1,000 M= 1,000,000
2. All capacitance values are in microfarads. P= 1/1,000,000


IC106
IC206
IC306
IC406
Q102 Q202 Q302 Q402
Q105 Q205 Q305 Q405
Q104 Q204 Q304 Q404
Q103 Q203 Q303 Q403
IC106 μPC1270H POWER AMP
IC206 μPC1270H POWER AMP
IC306 μPC1270H POWER AMP
IC406 μPC1270H POWER AMP
STANDARD BIAS
CONSTANT CURRENT LOAD
PROTECTOR
DRIVE STEPS
DIFFERENTIAL AMPLIFIER
PRE DRIVE
CURRENT MIRROR LOAD
TEMPERATURE COMPENSATION
+Vccp
+Vcco
-Vccp
-Vcco
Q102 2SC945L BIAS
Q202 2SC945L BIAS
Q302 2SC945L BIAS
Q402 2SC945L BIAS
D101 ISS176
D201 ISS176
D301 ISS176
D401 ISS176
L101 1.1μH
Q103 2SC1841 OVER LOAD PROTECTOR
Q203 2SC1841 OVER LOAD PROTECTOR
Q303 2SC1841 OVER LOAD PROTECTOR
Q403 2SC1841 OVER LOAD PROTECTOR
Q105 Q104 2SC4386 2SA1671 DRIVER
Q205 Q204 2SC4386 2SA1671 DRIVER
Q305 Q304 2SC4386 2SA1671 DRIVER
Q405 Q404 2SC4386 2SA1671 DRIVER
Transistor P.C.Board (1/4)
Transistor P.C.Board (2/4)
Transistor P.C.Board (3/4)
Transistor P.C.Board (4/4)
Output P.C.Board (1/2)
Output P.C.Board (2/2)
ET502-1
ET502-2
ET502-1 Speaker Output Terminals
ET502-2 Speaker Output Terminals
BRIDGE
1ch
2ch
3ch
4ch
S. GND
REG.-B
REG.+B
To Amp P.C.Board (2/2)
OVER CURRENT PROTECTOR
+B
-B
MUTE
To Amp P.C. BOARD (2/2)

| IC | IC104 | IC204 | IC304 | IC404 |
|---|---|---|---|---|
| Pin | Voltage | Voltage | Voltage | Voltage |
| 1 | 0V | 0V | 0V | 0V |
| 2 | 0V | 0V | 0V | 0V |
| 3 | 0V | 0V | 0V | 0V |
| 4 | –15.3V | –15.3V | –15.3V | –15.3V |
| 5 | 0V | 0V | 0V | 0V |
| 6 | 0V | 0V | 0V | 0V |
| 7 | 0V | 0V | 0V | 0V |
| 8 | 15.3V | 15.3V | 15.3V | 15.3V |

| IC | IC103 | IC303 |
|---|---|---|
| Pin | Voltage | Voltage |
| 1 | 5.5V | 5.5V |
| 2 | 4.9V | 4.9V |
| 3 | 5.5V | 5.5V |
| 4 | 4.9V | 4.9V |
| 5 | 5.5V | 5.5V |
| 6 | 4.9V | 4.9V |
| 7 | 5.6V | 5.6V |
| 8 | 5.6V | 5.6V |
| 9 | 5.6V | 5.6V |
| 10 | 0V | 0V |
| 11 | 15.3V | 15.3V |
| 12 | 5.6V | 5.6V |
| 13 | 5.6V | 5.6V |
| 14 | 5.6V | 5.6V |
| 15 | 4.9V | 4.9V |
| 16 | 5.5V | 5.5V |
| 17 | 4.9V | 4.9V |
| 18 | 5.5V | 5.5V |
| 19 | 4.9V | 4.9V |
| 20 | 5.5V | 5.5V |

| IC | IC106 | IC206 | IC306 | IC406 |
|---|---|---|---|---|
| Pin | Voltage | Voltage | Voltage | Voltage |
| 1 | 27.9V | 27.9V | 27.9V | 27.9V |
| 2 | 27.9V | 27.9V | 27.9V | 27.9V |
| 3 | 27.9V | 27.9V | 27.9V | 27.9V |
| 4 | 0.12V | 0.12V | 0.12V | 0.12V |
| 5 | 0.12V | 0.12V | 0.12V | 0.12V |
| 6 | –26.2V | –26.2V | –26.2V | –26.2V |
| 7 | –1.2V | –1.2V | –1.2V | –1.2V |
| 8 | 0.48V | 0.48V | 0.48V | 0.48V |
| 9 | –27.9V | –27.9V | –27.9V | –27.9V |
| 10 | –27.9V | –27.9V | –27.9V | –27.9V |
| 11 | –0.6V | –0.6V | –0.6V | –0.6V |
| 12 | 0.6V | 0.6V | 0.6V | 0.6V |

| IC | IC101 | IC102 | IC105 | IC301 | IC305 |
|---|---|---|---|---|---|
| Pin | Voltage | Voltage | Voltage | Voltage | Voltage |
| 1 | 0V | 0V | 0V | 0V | 0V |
| 2 | 0V | 0V | 0V | 0V | 0V |
| 3 | 0V | 0V | 0V | 0V | 0V |
| 4 | –15.3V | –15.3V | –15.3V | –15.3V | –15.3V |
| 5 | 0V | 0V | 0V | 0V | 0V |
| 6 | 0V | 0V | 0V | 0V | 0V |
| 7 | 0V | 0V | 0V | 0V | 0V |
| 8 | 15.3V | 15.3V | 15.3V | 15.3V | 15.3V |

| | B | C | E |
|---|---|---|---|
| Q101 | 14.36V | 0V | 0V |
| Q102 | 0.6V | 0.48V | –1.2V |
| Q103 | 0.01V | 13.9V | –0.01V |
| Q104 | 0.49V | –27.9V | –0.1V |
| Q105 | 0.49V | 27.9V | –0.1V |
| Q201 | 14.36V | 0V | 0V |
| Q202 | 0.6V | 0.48V | –1.2V |
| Q203 | 0.01V | 13.9V | –0.01V |
| Q204 | 0.49V | –27.9V | –0.1V |
| Q205 | 0.49V | 27.9V | –0.1V |
| Q301 | 14.36V | 0V | 0V |
| Q302 | 0.6V | 0.48V | –1.2V |
| Q303 | 0.01V | 13.9V | –0.01V |
| Q304 | 0.49V | –27.9V | –0.1V |
| Q305 | 0.49V | 27.9V | –0.1V |
| Q401 | 14.36V | 0V | 0V |
| Q402 | 0.6V | 0.48V | –1.2V |
| Q403 | 0.01V | 13.9V | –0.01V |
| Q404 | 0.49V | –27.9V | –0.1V |
| Q405 | 0.49V | 27.9V | –0.1V |

- Measuring Conditions

| | |
|---|---|
| 1. Power Supply Voltage | : DC14.4V |
| 2. Measuring Meter | : Digital Multi Voltmeter |
| 3. Measuring Point Reference | : Between Ground |
| 4. Measuring Condition | : No Signal Input |

# Electrical Parts List

Resistor : Carbon resistors under 1 / 4 watts are not mentioned in the parts list, please confirm them by schematic diagram.

Capacitor : μF = microfarads, pF = picofarads

### Abbreviations

| | | | |
|---|---|---|---|
| RES. = | Resistor | CAP. = | Capacitor |
| C.F. = | Carbon Film | ELY. = | Electrolytic |
| M.F. = | Metal Film | CER. = | Ceramic |
| M.O. = | Metal Oxide Film | MYL. = | Mylar |
| M.P. = | Metal Plate | TAN. = | Tantalum |
| TR. = | Transistor | POLY. = | Polystyrol |
| TRANS. = | Transformer | PP. = | Polypropylene |
| CP. = | Chip | PLT. = | Polyethylene |
| | | PF. = | Polyester Film |

## AMP P . C . Board

### IC's

| Symbol No. | Part No. | Description |
|---|---|---|
| IC101 | 51T25576W02 | NJM4580L |
| IC102 | 51T25576W02 | NJM4580L |
| IC104 | 51T25576W02 | NJM4580L |
| IC105 | 51T25576W02 | NJM4580L |
| IC106 | 51E06841S01 | μPC1270H |
| IC204 | 51T25576W02 | NJM4580L |
| IC206 | 51E06841S01 | μPC1270H |
| IC301 | 51T25576W02 | NJM4580L |
| IC304 | 51T25576W02 | NJM4580L |
| IC305 | 51T25576W02 | NJM4580L |
| IC306 | 51E06841S01 | μPC1270H |
| IC404 | 51T25576W02 | NJM4580L |
| IC406 | 51E06841S01 | μPC1270H |
| IC501 | 51T70759F01 | μPC494C |
| IC502 | 51E09178S01 | PS2501-1 |

### Transistors

| Symbol No. | Part No. | Description |
|---|---|---|
| Q101 | 48E06355S01 | 2SC3327 |
| Q103 | 48E08295S01 | 2SC1841 |
| Q104 | 48E06360S04 | 2SA1671 |
| Q105 | 48E06361S04 | 2SC4386 |
| Q201 | 48E06355S01 | 2SC3327 |
| Q203 | 48E08295S01 | 2SC1841 |
| Q204 | 48E06360S04 | 2SA1671 |
| Q205 | 48E06361S04 | 2SC4386 |
| Q301 | 48E06355S01 | 2SC3327 |
| Q303 | 48E08295S01 | 2SC1841 |
| Q304 | 48E06360S04 | 2SA1671 |
| Q305 | 48E06361S04 | 2SC4386 |
| Q401 | 48E06355S01 | 2SC3327 |
| Q403 | 48E08295S01 | 2SC1841 |
| Q404 | 48E06360S04 | 2SA1671 |
| Q405 | 48E06361S04 | 2SC4386 |
| Q501 | 48S44578J02 | 2SC945L |
| Q502 | 48S44578J02 | 2SC945L |
| Q503 | 48T40081T02 | 2SA733 |
| Q504 | 48T40081T02 | 2SA733 |
| Q505 | 48T82883F01 | 2SC3852 |
| Q506 | 48T82883F01 | 2SC3852 |
| Q507 | 48E06359S03 | 2SD1669 |
| Q508 | 48E06359S03 | 2SD1669 |
| Q509 | 48E06359S03 | 2SD1669 |
| Q510 | 48E06359S03 | 2SD1669 |
| Q511 | 48E06359S03 | 2SD1669 |
| Q512 | 48E06359S03 | 2SD1669 |
| Q513 | 48T69176F02 | 2SC3421 |
| Q514 | 48T70761F01 | 2SA1358 |
| Q515 | 48T70761F01 | 2SA1358 |
| Q516 | 48E09189S02 | DTC114ES |
| Q517 | 48S44578J02 | 2SC945L |
| Q518 | 48T40081T02 | 2SA733 |
| Q519 | 48S44578J02 | 2SC945L |
| Q520 | 48T40081T02 | 2SA733 |
| Q521 | 48E08748S01 | DTC144ES |
| Q522 | 48E08748S02 | DTA144ES |
| Q523 | 48S44578J02 | 2SC945L |
| Q524 | 48S44578J02 | 2SC945L |
| Q525 | 48E09189S01 | DTA114ES |
| Q526 | 48E09189S02 | DTC114ES |
| Q527 | 48E09189S02 | DTC114ES |

### Diodes

| Symbol No. | Part No. | Description |
|---|---|---|
| D101 | 48T58583F01 | 1SS176 |
| D201 | 48T58583F01 | 1SS176 |
| D301 | 48T58583F01 | 1SS176 |
| D401 | 48T58583F01 | 1SS176 |
| D502 | 48T68079F03 | 30D4 |
| D503 | 48T58583F01 | 1SS176 |
| D504 | 48T58583F01 | 1SS176 |
| D505 | 48T58583F01 | 1SS176 |
| D506 | 48E02081S01 | 11E2 |
| D507 | 48T58583F01 | 1SS176 |
| D508 | 48T58583F01 | 1SS176 |
| D509 | 48T58583F01 | 1SS176 |
| D510 | 48T58583F01 | 1SS176 |
| D511 | 48E09190S01 | F10P20F |
| D512 | 48E09190S02 | F10P20FR |

| Symbol No. | Part No. | Description |
|---|---|---|
| ZD501 | 48T68702F59 | Zener, RD16ESB1 |
| ZD502 | 48T68702F59 | Zener, RD16ESB1 |
| ZD503 | 48T68702F29 | Zener, RD6.2ESB1 |
| ZD504 | 48T68702F70 | Zener, RD22ESB3 |
| ZD505 | 48T25766W13 | Zener, HZS7B1L |
| **Thermistor** | | |
| TH501 | 48E06365S01 | 20Kohm |
| **Switches** | | |
| S501 | 40E09137S01 | SSSF14 (ACOUSTIC COMPENSATION) |
| S502 | 40E09138S01 | SSSF12 (FILTER) |
| S503 | 40E09138S01 | SSSF12 (FILTER) |
| S504 | 40E09138S01 | SSSF12 (INPUT MODE) |
| S505 | 40E09138S01 | SSSF12 (INPUT MODE) |
| S506 | 40E09136S01 | SSSF14 (INPUT CHANNEL) |
| **Coils** | | |
| L101 | 24E06338S01 | 1.1μH |
| L201 | 24E06338S01 | 1.1μH |
| L301 | 24E06338S01 | 1.1μH |
| L401 | 24E06338S01 | 1.1μH |
| L501 | 24E07941S01 | Choke |
| L502 | 24E07941S01 | Choke |
| **Transformers** | | |
| T501 | 25E06340S01 | Power |
| T502 | 25E06342S01 | Choke |

| Symbol No. | Part No. | Description | |
|---|---|---|---|
| **Capacitors** | | | |
| C101 | 21E07287S01 | CER., | 47pF |
| E101 | 23E07084S01 | ELY., | 10μF/16V |
| C102 | 21E07287S01 | CER., | 47pF |
| E102 | 23E07084S01 | ELY., | 10μF/16V |
| C109 | 08E09008S10 | PF., | 0.22μF |
| E109 | 23E06854S01 | ELY., | 10μF/16V |
| C110 | 08E09008S14 | PF., | 0.047μF |
| E110 | 23E06854S01 | ELY., | 10μF/16V |
| C111 | 08E09008S06 | PF., | 0.1μF |
| E111 | 23E06854S01 | ELY., | 10μF/16V |
| C112 | 08E09008S06 | PF., | 0.1μF |
| E112 | 23E06854S01 | ELY., | 10μF/16V |
| C113 | 08E09008S11 | PF., | 0.27μF |
| E113 | 23E06854S01 | ELY., | 10μF/16V |
| C114 | 21E06324S01 | CER., | 220pF |
| C115 | 23E06330S01 | ELY., (B.P) | 100μF/10V |
| E115 | 23E04826S01 | ELY., | 0.47μF/50V |
| C116 | 21E06638S01 | CER., | 22pF |
| C117 | 08E09008S14 | PF., | 0.047μF |
| C201 | 21E07287S01 | CER., | 47pF |
| E201 | 23E07084S01 | ELY., | 10μF/16V |
| C202 | 21E07287S01 | CER., | 47pF |
| E202 | 23E07084S01 | ELY., | 10μF/16V |
| C209 | 08E09008S10 | PF., | 0.22μF |
| E209 | 23E06854S01 | ELY., | 10μF/16V |
| C210 | 08E09008S14 | PF., | 0.047μF |
| E210 | 23E06854S01 | ELY., | 10μF/16V |
| C211 | 08E09008S06 | PF., | 0.1μF |
| E211 | 23E06854S01 | ELY., | 10μF/16V |
| C212 | 08E09008S06 | PF., | 0.1μF |
| E212 | 23E06854S01 | ELY., | 10μF/16V |
| C213 | 08E09008S11 | PF., | 0.27μF |
| E213 | 23E06854S01 | ELY., | 10μF/16V |
| C214 | 21E06324S01 | CER., | 220pF |
| C215 | 23E06330S01 | ELY., (B.P) | 100μF/10V |
| E215 | 23E04826S01 | ELY., | 0.47μF/50V |
| C216 | 21E06638S01 | CER., | 22pF |
| C217 | 08E09008S14 | PF., | 0.047μF |
| C301 | 21E06324S01 | CER., | 220pF |
| E301 | 23E07084S01 | ELY., | 10μF/16V |
| C309 | 08E09008S10 | PF., | 0.22μF |
| E309 | 23E06854S01 | ELY., | 10μF/16V |
| C310 | 08E09008S14 | PF., | 0.047μF |
| E310 | 23E06854S01 | ELY., | 10μF/16V |
| C311 | 08E09008S06 | PF., | 0.1μF |
| E311 | 23E06854S01 | ELY., | 10μF/16V |
| C312 | 08E09008S06 | PF., | 0.1μF |
| E312 | 23E06854S01 | ELY., | 10μF/16V |
| C313 | 08E09008S11 | PF., | 0.27μF |
| E313 | 23E06854S01 | ELY., | 10μF/16V |

| Symbol No. | Part No. | Description |
|---|---|---|
| C314 | 21E06324S01 | CER., 220pF |
| C315 | 23E06330S01 | ELY., (B.P) 100µF / 10V |
| E315 | 23E04826S01 | ELY., 0.47µF / 50V |
| C316 | 21E06638S01 | CER., 22pF |
| C317 | 08E09008S14 | PF., 0.047µF |
| C401 | 21E06324S01 | CER., 220pF |
| E401 | 23E07084S01 | ELY., 10µF / 16V |
| C409 | 08E09008S10 | PF., 0.22µF |
| E409 | 23E06854S01 | ELY., 10µF / 16V |
| C410 | 08E09008S14 | PF., 0.047µF |
| E410 | 23E06854S01 | ELY., 10µF / 16V |
| C411 | 08E09008S06 | PF., 0.1µF |
| E411 | 23E06854S01 | ELY., 10µF / 16V |
| C412 | 08E09008S06 | PF., 0.1µF |
| E412 | 23E06854S01 | ELY., 10µF / 16V |
| C413 | 08E09008S11 | PF., 0.27µF |
| E413 | 23E06854S01 | ELY., 10µF / 16V |
| C414 | 21E06324S01 | CER., 220pF |
| C415 | 23E06330S01 | ELY., (B.P) 100µF / 10V |
| E415 | 23E04826S01 | ELY., 0.47µF / 50V |
| C416 | 21E06638S01 | CER., 22pF |
| C417 | 08E09008S14 | PF., 0.047µF |
| C501 | 08E09151S02 | PF., 0.01µF |
| E501 | 23E08297S02 | ELY., 3300µF / 16V |
| C502 | 21E06323S01 | CER., 100pF |
| E502 | 23E08297S02 | ELY., 3300µF / 16V |
| C503 | 21E06323S01 | CER., 100pF |
| E503 | 23E08302S01 | ELY., 470µF / 35V |
| C504 | 21E06325S01 | CER., 560pF |
| E504 | 23E08302S01 | ELY., 470µF / 35V |
| C505 | 21E06325S01 | CER., 560pF |
| E505 | 23E09187S01 | ELY., 4700µF / 35V |
| C506 | 21E06323S01 | CER., 100pF |
| E506 | 23E09187S01 | ELY., 4700µF / 35V |
| C507 | 21E06323S01 | CER., 100pF |
| E507 | 23E08794S01 | ELY., 100µF / 25V |
| C508 | 08E09008S06 | PF., 0.1µF |
| E508 | 23E08794S01 | ELY., 100µF / 25V |
| C509 | 08E09008S06 | PF., 0.1µF |
| E509 | 23E08793S03 | ELY., 220µF / 16V |
| C510 | 08E09008S06 | PF., 0.1µF |
| E510 | 23E08793S03 | ELY., 220µF / 16V |
| C511 | 08E09008S01 | PF., 0.056µF |
| E511 | 23E04836S01 | ELY., 220µF / 10V |
| C512 | 08E09008S06 | PF., 0.1µF |
| E512 | 23E04836S01 | ELY., 220µF / 10V |
| C513 | 08E09151S06 | PF., 1200pF |
| E513 | 23E04833S01 | ELY., 100µF / 16V |
| C514 | 08E09151S02 | PF., 0.01µF |
| E514 | 23E04833S01 | ELY., 100µF / 16V |
| E515 | 23E04833S01 | ELY., 100µF / 16V |
| E516 | 23E06854S01 | ELY., 10µF / 16V |

| Symbol No. | Part No. | Description |
|---|---|---|
| E517 | 23E04833S01 | ELY., 100µF / 16V |

Resistors

| Symbol No. | Part No. | Description |
|---|---|---|
| R145 | 17E09609S01 | Cement, 0.1ohm 3W×2 |
| R147 | 06E06383S01 | SPR, 10 ohm 1W |
| R245 | 17E09609S01 | Cement, 0.1ohm 3W×2 |
| R247 | 06E06383S01 | SPR, 10 ohm 1W |
| R345 | 17E09609S01 | Cement, 0.1ohm 3W×2 |
| R347 | 06E06383S01 | SPR, 10 ohm 1W |
| R445 | 17E09609S01 | Cement, 0 1ohm 3W×2 |
| R447 | 06E06383S01 | SPR, 10 ohm 1W |
| R515 | 06E06382S01 | SPR, 1 ohm 1W |
| R516 | 06E06382S01 | SPR, 1 ohm 1W |
| R517 | 06E06382S01 | SPR, 1 ohm 1W |
| R518 | 06E06382S01 | SPR, 1 ohm 1W |
| R519 | 06E06382S01 | SPR, 1 ohm 1W |
| R520 | 06E06382S01 | SPR, 1 ohm 1W |
| R521 | 06E06383S01 | SPR, 10 ohm 1W |
| R522 | 06E06383S01 | SPR, 10 ohm 1W |
| R523 | 06E06383S01 | SPR, 10 ohm 1W |
| R524 | 06E06383S01 | SPR, 10 ohm 1W |
| R525 | 06E06383S01 | SPR, 10 ohm 1W |
| R526 | 06E06383S01 | SPR, 10 ohm 1W |
| R529 | 06E06384S01 | SPR, 100 ohm 1W |
| R530 | 06E06384S01 | SPR, 100 ohm 1W |
| R531 | 17E08299S01 | Cement, 0.1ohm 5W |
| R553 | 06E03962S01 | CF., 680 ohm 1/2W |
| R564 | 06E07006S02 | CF., 560 ohm 1/2W |
| R565 | 06E07006S02 | CF., 560 ohm 1/2W |
| R566 | 06E03962S01 | CF., 680 ohm 1/2W |
| R567 | 06E03962S01 | CF., 680 ohm 1/2W |
| VR501 | 18E09602S01 | Variable, 10K ohm×2 (GAIN CONTROL) |
| VR502 | 18E09602S01 | Variable, 10K ohm ×2 (GAIN CONTROL) |

## Acoustic P . C . Board

IC's

| Symbol No. | Part No. | Description |
|---|---|---|
| IC103 | 51T25431W01 | M5243P |
| IC303 | 51T25431W01 | M5243P |

Capacitors

| Symbol No. | Part No. | Description |
|---|---|---|
| C103 | 08E09008S11 | PF., 0.27µF |
| E103 | 23E07086S01 | ELY., 4.7µF / 25V |
| C104 | 08E09008S03 | PF., 0.082µF |
| C105 | 08E09008S12 | PF., 0.18µF |
| E105 | 23E07090S01 | ELY., 0.68µF / 50V |
| C106 | 21E06323S01 | CER., 100pF |
| E107 | 23E07084S01 | ELY., 10µF / 16V |
| C203 | 08E09008S11 | PF., 0.27µF |
| E203 | 23E07086S01 | ELY., 4.7µF / 25V |
| C204 | 08E09008S03 | PF., 0.082µF |
| C205 | 08E09008S12 | PF., 0.18µF |
| E205 | 23E07090S01 | ELY., 0.68µF / 50V |
| C206 | 21E06323S01 | CER., 100pF |
| E207 | 23E07084S01 | ELY., 10µF / 16V |
| C303 | 08E09008S11 | PF., 0.27µF |
| E303 | 23E07086S01 | ELY., 4.7µF / 25V |
| C304 | 08E09008S03 | PF., 0.082µF |
| C305 | 08E09008S12 | PF., 0.18µF |
| E305 | 23E07090S01 | ELY., 0.68µF / 50V |
| C306 | 21E06323S01 | CER., 100pF |
| E307 | 23E07084S01 | ELY., 10µF / 16V |
| C403 | 08E09008S11 | PF., 0.27µF |
| E403 | 23E07086S01 | ELY., 4.7µF / 25V |
| C404 | 08E09008S03 | PF., 0.082µF |
| C405 | 08E09008S12 | PF., 0.18µF |
| E405 | 23E07090S01 | ELY., 0.68µF / 50V |
| C406 | 21E06323S01 | CER., 100pF |
| E407 | 23E07084S01 | ELY., 10µF / 16V |

## Output P . C . Board

Capacitors

| Symbol No. | Part No. | Description |
|---|---|---|
| C150 | 08E09008S06 | PF., 0.1µF |
| C151 | 08E09008S16 | PF., 0.022µF |
| C250 | 08E09008S06 | PF., 0.1µF |
| C251 | 08E09008S16 | PF., 0.022µF |
| C350 | 08E09008S06 | PF., 0.1µF |
| C351 | 08E09008S16 | PF., 0.022µF |
| C450 | 08E09008S06 | PF., 0.1µF |
| C451 | 08E09008S16 | PF., 0.022µF |

Resistors

| Symbol No. | Part No. | Description |
|---|---|---|
| R150 | 06E06383S01 | SPR, 10 ohm 1W |
| R250 | 06E06383S01 | SPR, 10 ohm 1W |
| R350 | 06E06383S01 | SPR, 10 ohm 1W |
| R450 | 06E06383S01 | SPR, 10 ohm 1W |

## Power P . C . Board

Diode / Capacitor

| Symbol No. | Part No. | Description |
|---|---|---|
| D570 | 48E02081S01 | Diode, 11E2 |
| C570 | 08E09008S15 | PF., 0.47µF |

## RCA P . C . Board

Capacitors

| Symbol No. | Part No. | Description |
|---|---|---|
| C115 | 21E03875S01 | CER., 100pF |
| C215 | 21E03875S01 | CER., 100pF |

## Transistor P . C . Board

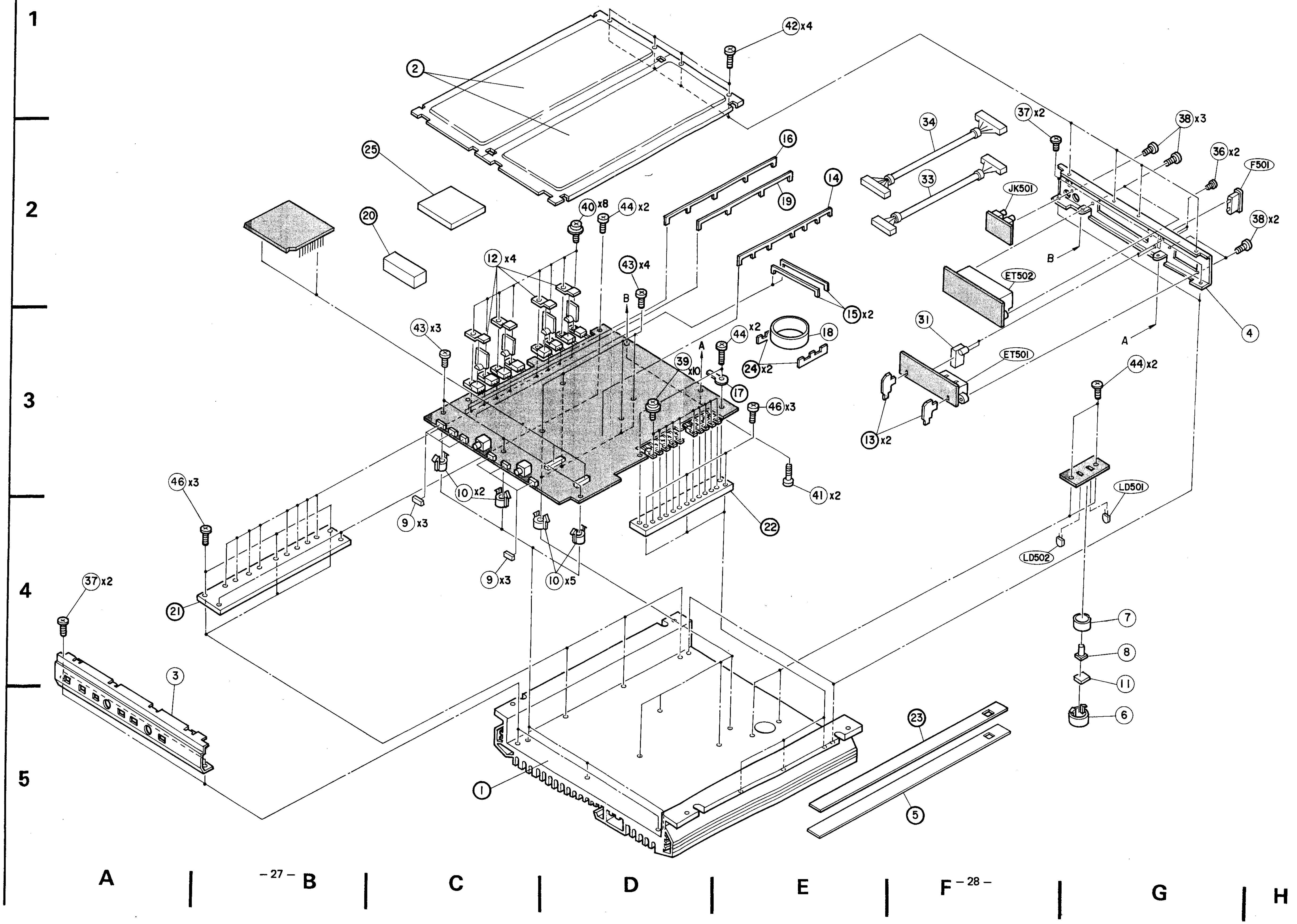
Transistors

| Symbol No. | Part No. | Description |
|---|---|---|
| Q102 | 48S44578J01 | 2SC945L |
| Q202 | 48S44578J01 | 2SC945L |
| Q302 | 48S44578J01 | 2SC945L |
| Q402 | 48S44578J01 | 2SC945L |

## Miscellaneous

| Symbol No. | Part No. | Description |
|---|---|---|
| ET501 | 29E09185S01 | Power Terminals |
| ET502 | 29E06476S01 | Speaker Output Terminals |
| F501 | 65S58596F08 | Fuse, Auto 30A (For Battery Line) |
| JK501 | 09E06320S01 | Input RCA Jack |
| LD501 | 48E06366S01 | LED, AABG4307K (ORG / GRN) |
| LD502 | 48E06366S01 | LED, AABG4307K (ORG / GRN) |

## Exploded View (Cabinet)


1
2
3
4
5
A
B
C
D
E
F
G
H
①
②
③
④
⑤
⑥
⑦
⑧
9 x3
9 x3
⑩ x2
⑩ x5
⑪
⑫ x4
⑬ x2
⑭
⑮ x2
⑯
⑰
⑱
⑲
⑳
㉑
㉒
㉓
㉔ x2
㉕
㉛
㉝
㉞
㊱ x2
㊲ x2
㊲ x2
㊳ x3
㊳ x2
㊴ x10
㊵ x8
㊶ x2
㊷ x4
㊸ x4
㊸ x3
㊹ x2
㊹ x2
㊹ x2
㊻ x3
㊻ x3
JK501
F501
ET502
ET501
LD501
LD502
A
A
B
B

# Cabinet Assembly Parts List

**Note :** The parts without parts list are not supplied.

| Symbol No. | Index | Part No. | Description |
|---|---|---|---|
| 3 | 4-A | 27E09703S01 | Chassis, Front |
| 4 | 3-G | 27E09704S01 | Chassis, Rear |
| 6 | 5-G | 15E09383S01 | Holder, LED |
| 7 | 4-G | 15E09384S01 | Cover, LED |
| 8 | 4-G | 07E09492S01 | LED Pre Base |
| 9 | 4-C | 36E09132S01 | Knob, Switch (B) |
| 10 |  | 43E08008S01 | Support, P.C.Board |
| 11 | 4-G | 61E06376S01 | Lens, LED |
| 12 |  | 07E09494S01 | Support, Transistor (B) |
| 18 | 3-E | 26A81610F02 | Shield, CU |
| 31 | 3-F | 09E06453S01 | Holder, Auto Fuse |
| 33 | 2-F | 01E09613S01 | Assy., Connector (3P) |
| 34 | 1-F | 01E09631S01 | Assy., Connector (5P) |
| 36 | 2-G | 03E08303S01 | Screw, CPTS-4 (M2 x 6) |
| 37 |  | 03E06480S01 | Screw, CPTS-2 (M3 x 6) |
| 38 |  | 03E04878S01 | Screw, CPTS-2 (M3 x 8) |
| 39 | 3-D | 03E08304S01 | Screw, CPTS-2 (M3 x 8.5) |
| 40 | 2-D | 03E08305S01 | Screw, CPTS-2 (M3 x 9.5) |
| 41 | 3-E | 03E06492S01 | Screw, CBTS-3 (M3 x 5) |
| 42 | 1-E | 03E06493S02 | Screw, CFTS-3 (M3 x 6) |
| 43 |  | 03E07234S01 | Screw, CBTS-2 (M3 x 12) |
| 44 |  | 03E08429S02 | Screw, CBTS-2 (M3 x 6) |
| 45 | 3-A | 03E08429S01 | Screw, CBTS-2 (M3 x 6) |
| 46 |  | 03E06967S01 | Screw, CBTS-2 (M3 x 10) |

| Symbol No. | Index | Part No. | Description |
|---|---|---|---|

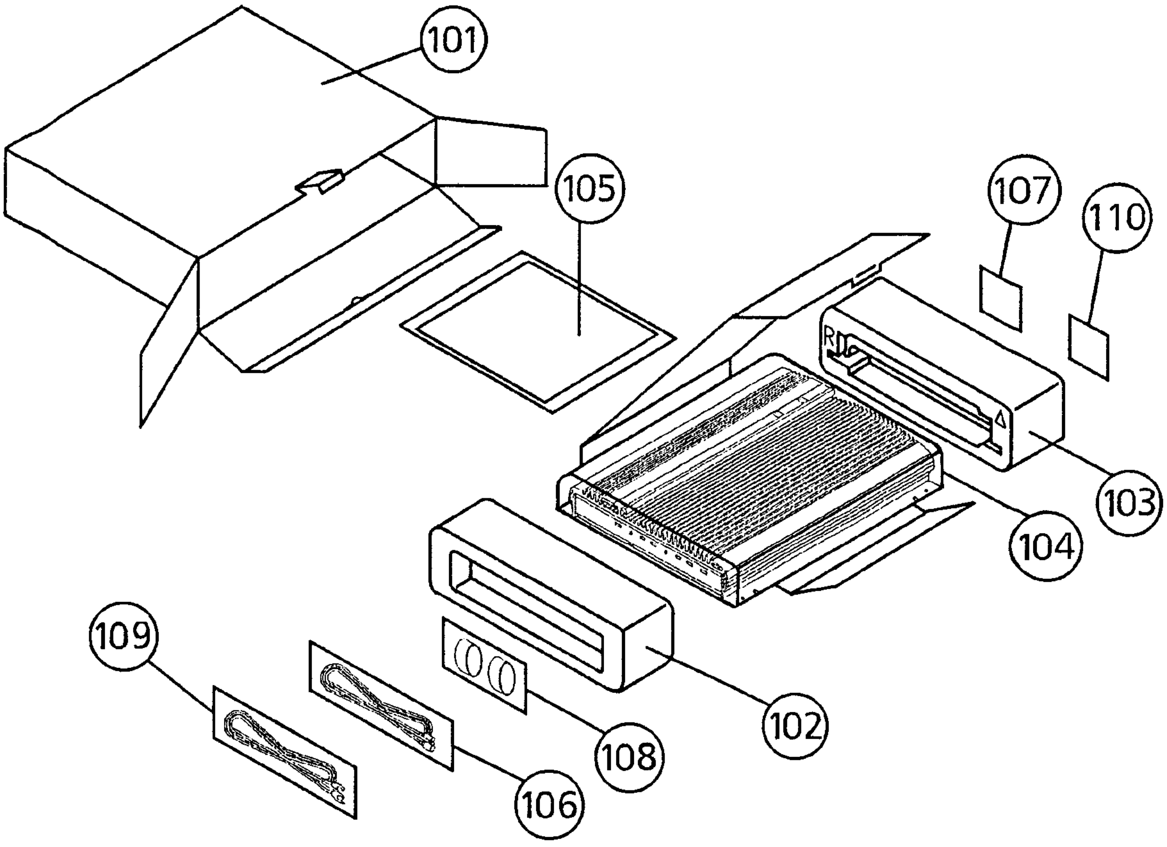
# Packing Assembly Parts List

| Symbol No. | Part No. | Description |
|---|---|---|
| ○ 101 | 56E09607S01 | Carton, Packing |
| ● 101 | 56E09607S01 | Carton, Packing |
| △ 101 | 56E09608S01 | Carton, Packing |
| 102 | 56E06374S01 | Tray, Packing (L) |
| 103 | 56E06375S01 | Tray, Packing (R) |
| 104 | 56B72811F08 | Sack, Polyethylene |
| ○ 105 | 68P21870W96 | Owner's Manual |
| ● 105 | 68P21870W96 | Owner's Manual |
| △ 105 | 68P21870W99 | Owner's Manual |
| 106 | 01E08346S01 | Assy., Remote Cord |
| 107 | 65S58596F08 | Fuse, Auto 30A<br>(For Battery Line) |
| 108 | 15A81064F03 | Housing Rubber |

| Symbol No. | Part No. | Description |
|---|---|---|
| ○ 109 | 01E06306S01 | Assy., Power Cord |
| ● 109 | 01E06306S01 | Assy., Power Cord |
| △ 109-1 | 01E09603S01 | Assy., Power Cord |
| △ 109-2 | 01E09604S01 | Assy., GND Cord |
| 110 | 03E09191S01 | Screw, CHTS-1 (M4×20) |

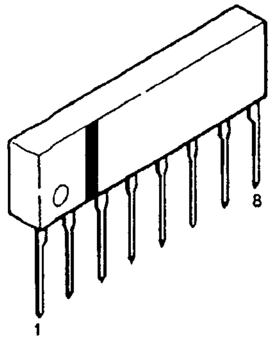
Notes: ○ : North American Model Only, ● : Canadian Model Only,
△ : General Foreign Model Only, Others : Common

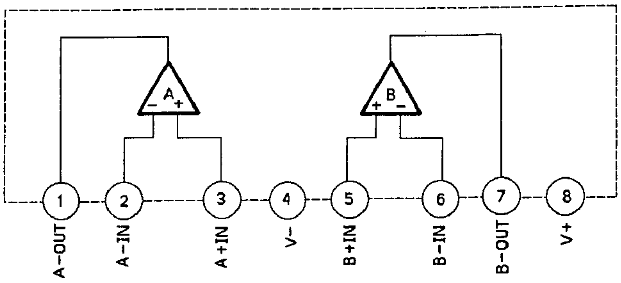
# Packing Method View



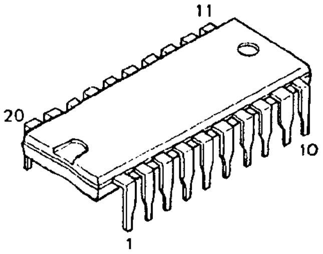
# Semi - Conductor Lead Identifications

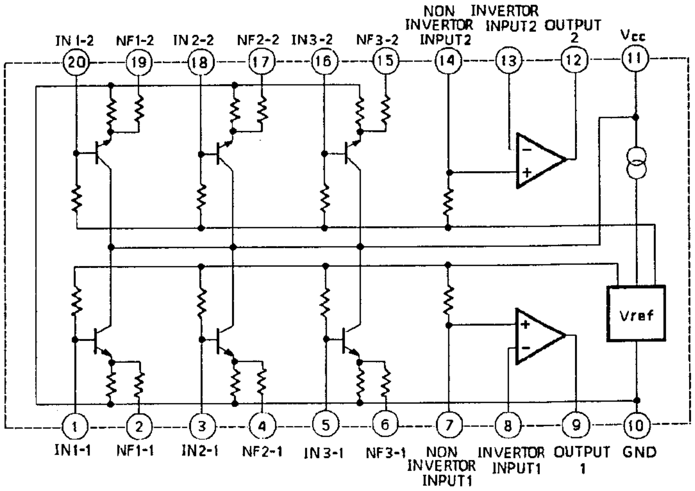
**NJM4580L** : IC101, 102, 104, 105, 204, 301, 304, 305, 404



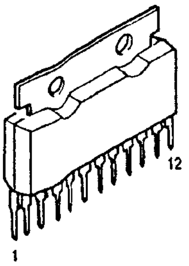

A
B
1 A−OUT
2 A−IN
3 A+IN
4 V−
5 B+IN
6 B−IN
7 B−OUT
8 V+

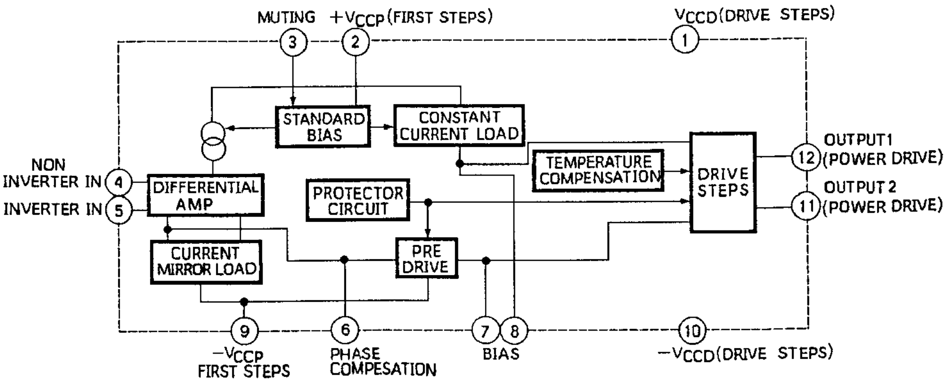
**M5243P** : IC103, 303



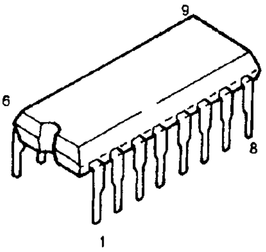

20 IN1-2
19 NF1-2
18 IN2-2
17 NF2-2
16 IN3-2
15 NF3-2
14 NON INVERTOR INPUT2
13 INVERTOR INPUT2
12 OUTPUT 2
11 Vcc
Vref
1 IN1-1
2 NF1-1
3 IN2-1
4 NF2-1
5 IN3-1
6 NF3-1
7 NON INVERTOR INPUT1
8 INVERTOR INPUT1
9 OUTPUT 1
10 GND

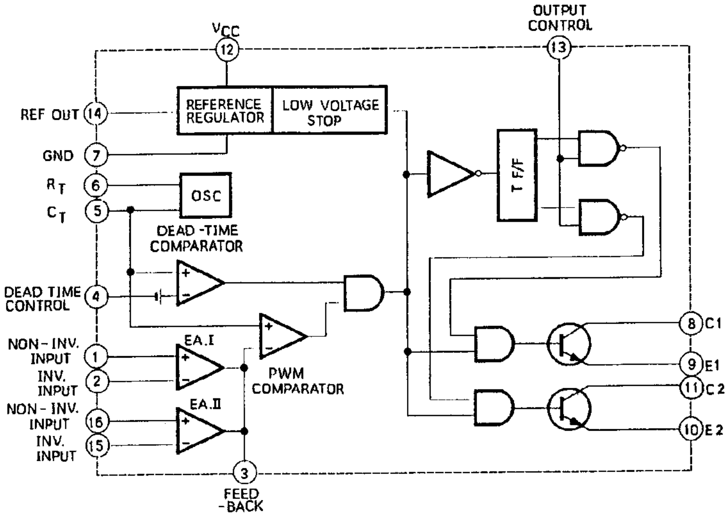
**µPC1270H** : IC106, 206, 306, 406



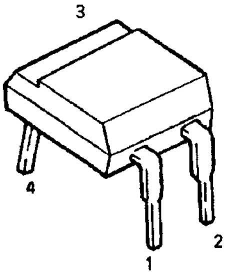

MUTING
+VCCP(FIRST STEPS)
VCCD(DRIVE STEPS)
STANDARD BIAS
CONSTANT CURRENT LOAD
TEMPERATURE COMPENSATION
DRIVE STEPS
NON INVERTER IN 4
INVERTER IN 5
DIFFERENTIAL AMP
PROTECTOR CIRCUIT
CURRENT MIRROR LOAD
PRE DRIVE
OUTPUT1 12 (POWER DRIVE)
OUTPUT2 11 (POWER DRIVE)
9 −VCCP FIRST STEPS
6 PHASE COMPESATION
7 8 BIAS
10 −VCCD(DRIVE STEPS)

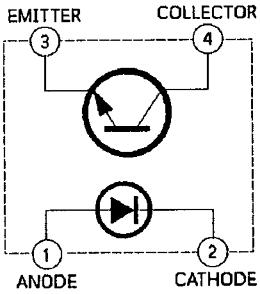
**µPC494C** : IC501




VCC
12
OUTPUT CONTROL
13
REF OUT 14
REFERENCE REGULATOR
LOW VOLTAGE STOP
GND 7
RT 6
OSC
CT 5
DEAD -TIME COMPARATOR
T F/F
DEAD TIME CONTROL 4
NON-INV. INPUT 1
EA.I
INV. INPUT 2
PWM COMPARATOR
NON-INV. INPUT 16
EA.II
INV. INPUT 15
3
FEED -BACK
8 C1
9 E1
11 C2
10 E2

**PS2501 - 1** : IC502




EMITTER
COLLECTOR
3
4
1
2
ANODE
CATHODE

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68P4 176W01
Printed in Japan

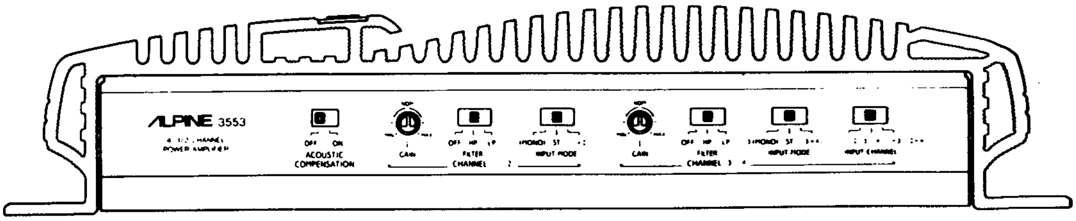
ALPINE®

# SERVICE MANUAL

4/3/2 Channel Power Amplifier

## — REVISED —

- **Serial Numbers after**
  **No. 20739301 for North American model only**
  **No. 20738601 for Canadian model only**
  **No. 20738101 for General Foreign model only**
- **For information that is not mentioned in this service manual, refer to the Service Manual 3553 (68P41176W01).**

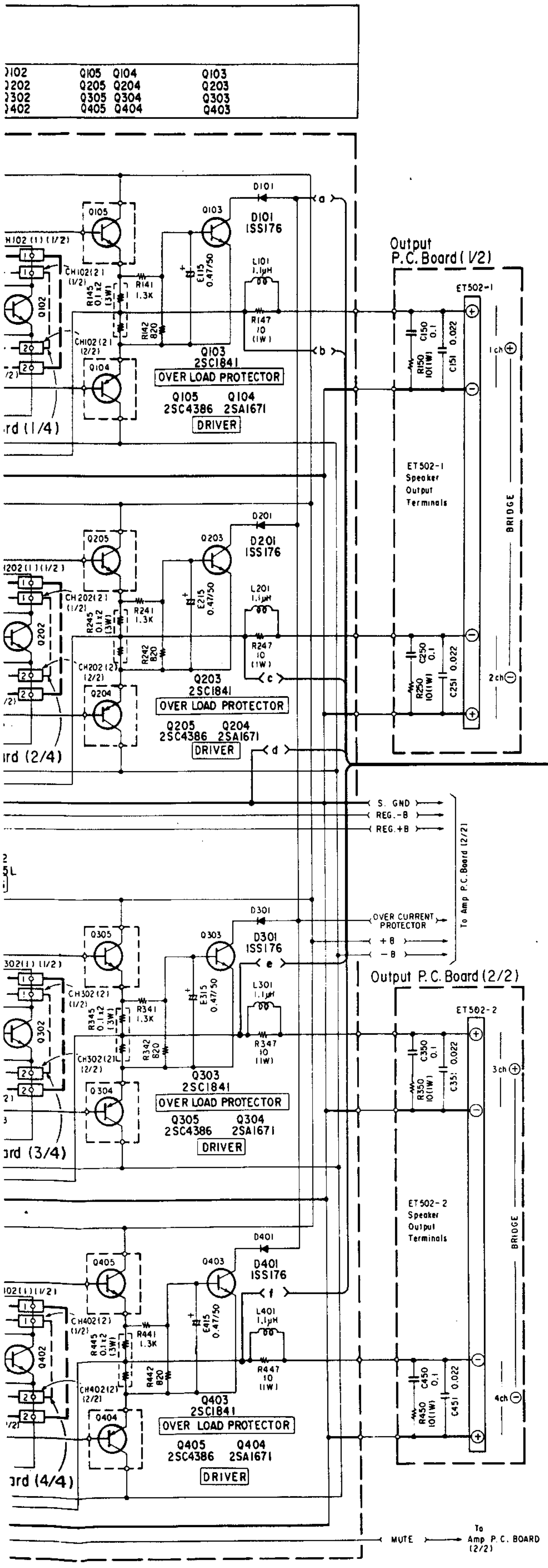

ALPINE 3553
OFF ON
ACOUSTIC COMPENSATION
GAIN
OFF HP LP
FILTER
CHANNEL
INPUT MODE
INPUT CHANNEL

# 3553

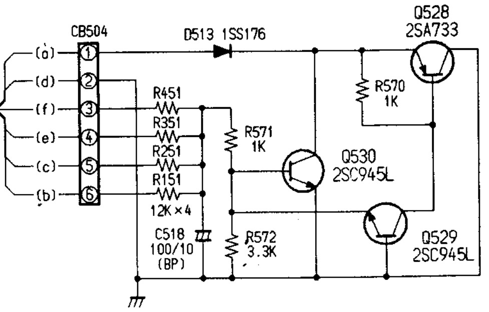
# Schematic Diagram

**Note :** Refer to the Service Manual 3553 (68P41176W01) for the description not mentioned in this manual.

NOTE:
1. All resistance values are in ohms. K= 1,000 M= 1,000,000
2. All capacitance values are in microfarads. P= 1/1,000,000


Q105 Q104 Q103
Q205 Q204 Q203
Q305 Q304 Q303
Q405 Q404 Q403
D101 1SS176
L101 1.1μH
R147 10 (1W)
R141 1.3K
R142 820
R145 0.1×2 (3W)
E115 0.47/50
Q103 2SC1841
OVER LOAD PROTECTOR
Q105 2SC4386
Q104 2SA1671
DRIVER
Output P.C. Board (1/2)
ET502-1
C150 0.1
C151 0.022
R150 10(1W)
1ch⊕
ET502-1 Speaker Output Terminals
BRIDGE
D201 1SS176
L201 1.1μH
R247 10 (1W)
R241 1.3K
R242 820
R245 0.1×2 (3W)
E215 0.47/50
Q203 2SC1841
Q205 2SC4386
Q204 2SA1671
C250 0.1
C251 0.022
R250 10(1W)
2ch⊖
S. GND
REG.-B
REG.+B
OVER CURRENT PROTECTOR
+B
-B
To Amp P.C. Board (2/2)
D301 1SS176
L301 1.1μH
R347 10 (1W)
R341 1.3K
R342 820
R345 0.1×2 (3W)
E315 0.47/50
Q303 2SC1841
Q305 2SC4386
Q304 2SA1671
Output P.C. Board (2/2)
ET502-2
C350 0.1
C351 0.022
R350 10(1W)
3ch⊕
ET502-2 Speaker Output Terminals
D401 1SS176
L401 1.1μH
R447 10 (1W)
R441 1.3K
R442 820
R445 0.1×2 (3W)
E415 0.47/50
Q403 2SC1841
Q405 2SC4386
Q404 2SA1671
C450 0.1
C451 0.022
R450 10(1W)
4ch⊖
rd (1/4)
rd (2/4)
rd (3/4)
rd (4/4)
MUTE
To Amp P.C. BOARD (2/2)
a
b
c
d
e
f

## Additional Circuit Diagram


CB504
D513 1SS176
Q528 2SA733
R570 1K
R451
R351
R251
R151
12K×4
R571 1K
Q530 2SC945L
C518 100/10 (BP)
R572 3.3K
Q529 2SC945L
(a) 1
(d) 2
(f) 3
(e) 4
(c) 5
(b) 6

Q528~530

DC BIAS DET

| | B | C | E |
|---|---|---|---|
| Q528 | 13.5V | 0V | 13.5V |
| Q529 | 0V | 13.5V | 0V |
| Q530 | 0V | 13.5V | 0V |

# Electrical Parts List

**Note** : The parts is not mentioned, refer to the Service Manual 3553 (68P41176W01).

| Symbol No. | Part No. | Description |
|---|---|---|
| AMP P. C. Board | | |
| Transistors | | |
| Q528 | 48T40081T02 | 2SA733 |
| Q529 | 48S44578J02 | 2SC945L |
| Q530 | 48S44578J02 | 2SC945L |

| Symbol No. | Part No. | Description |
|---|---|---|
| Diode | | |
| D513 | 48T58583F01 | 1SS176 |
| Capacitor | | |
| C518 | 23E06330S01 | ELY., (B.P) 100$\mu$F / 10V |

# Packing Assembly Parts List

**Note** : The parts is not mentioned, refer to the Service Manual 3553 (68P41176W01).

| Symbol No. | Part No. | Description |
|---|---|---|
| 109 | 01E10204S01 | Assy., Power Cord |
| 109-1 | 30E10206S01 | Battery Cord |
| 109-2 | 30E10207S01 | GND Cord |

| Symbol No. | Part No. | Description |
|---|---|---|
| | | |

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